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PAPER TRADE JOURNAL

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Vol. LXXXV, No. 10 SEPTEMBER 8, 1927 Per annum $4.00 Per Copy 10 Cents

WALMSLEY MACHINES EXCEL

TWO 234" NEWSPRINT MACHINES INSTALLED AT POWELL RIVER IN 1926

Powell River making newsprint records

The Powell River Digest says:—

During the month of February our biggest output for twenty-four hours was on number five, which on the fifth of the month made 126.08 tons of newsprint. On the fourth of the month, number six machine rolled off 115.05 tons. Congratulations.

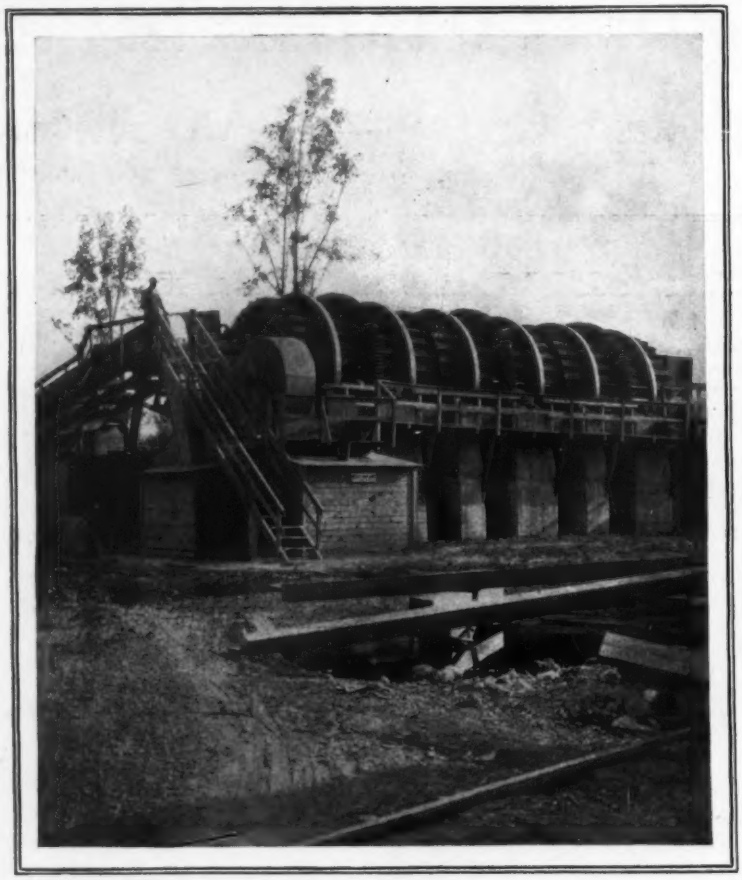
—Pulp and Paper Magazine, Mar. 31st. 1927.

Works: Longueuil, Que. Canada

Charles Walmsley & Co. (CANADA) LIMITED

Office: Montreal, Que. Canada

This Barking Drum Will Help You Meet Competition



Paulson Drums are made in our own plants and we would be glad to send you our booklet which describes and illustrates the equipment. If you will let us know what your requirements are we will be pleased to quote accordingly. Write for this booklet today.

WITH the advance in prices of both wood and labor and the large number of new mills which have or soon will commence production, every pulp Mill will meet the necessity of lowering their costs. Paulson Barking Equipment will help you do this by increasing the efficiency of your wood room.

Paulson Patented Drums not only show a large saving in pulp wood and labor but will also reduce your wood room maintenance.

Like all other Manitowoc paper mill equipment, this drum is outstanding in its sturdy construction and the dependable service which it renders.

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Manitowoc, Wisconsin

Let us figure on your:

Barking Drums
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Bleach Mixers
Clay Mixers
Refiners
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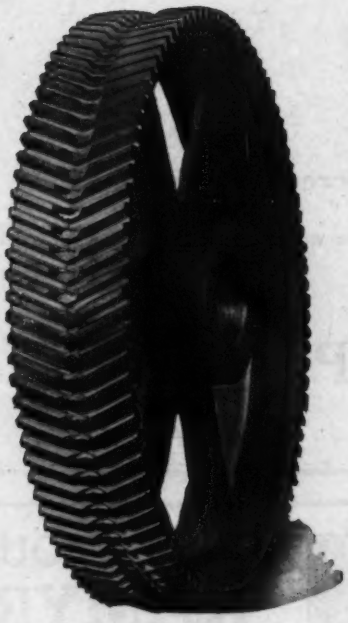
Incinerators
Disc Evaporators
Blow Pipes
Cylindrical Rotaries
Globe Rotaries

MANITOWOC

Entered as second class matter August 13, 1925, at the Post Office at East Stroudsburg, Pa., under Act of Congress of March 3, 1879. ESTABLISHED 1872 FIFTY-SIXTH YEAR Published every Thursday by the Lockwood Trade Journal Co., at 34 N. Crystal St., E. Stroudsburg, Pa
EXECUTIVE AND EDITORIAL OFFICES: 10 EAST 39th STREET, NEW YORK CITY. CHICAGO: 123 West Madison Street, Chicago, Ill.

Why Speculate in the Gear Market?



You don't have to take a chance when ordering Gears,—providing, of course, that you order them from a concern which SPECIALIZES IN GEARS.

There are a number of "good gear makers" in America today, concerns which can give you just what you want, when you want it,—

BUT, BE SURE YOU PICK OUT ONE OF THESE CONCERNS, or better still, just SEND YOUR ORDER TO "PHILLIE GEAR" AND YOU'LL BE PICKING ONE OF THE LEADERS.

For nearly half a century we've been making Gears of all Types, Sizes and Materials, and during that time, we've established an enviable reputation for our delivery speed on Hurry Orders and Breakdown jobs.

Note:—Our "Gear Book" tells the story, and contains a wealth of information besides. Send for it.

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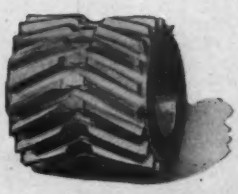

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They screen FASTER and CLEANER than any others.

Yet they cost no more to buy.

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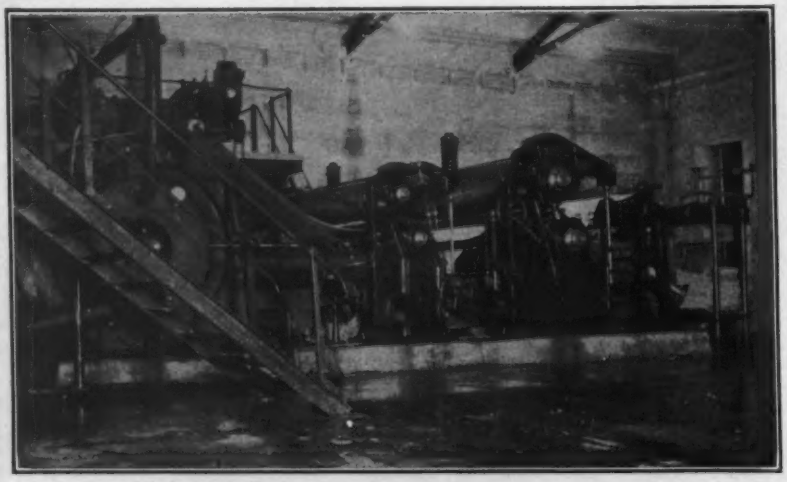

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100 tons dry Sulphite or Sulphate or 50 tons Ground Wood per 24 hours. Over fifty per-cent AIR-DRY.

Enormous savings in labour, felts, wires, general upkeep, floor space, steam, power, fibre, etc. Full information on request.

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—and cockling prevented by drying with graduated temperature—Less pressure or vacuum on paper machine dryers.

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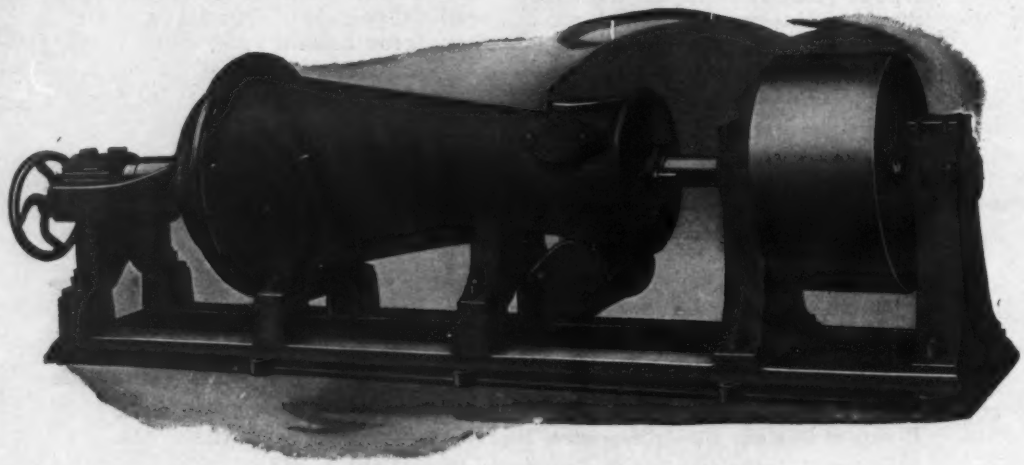
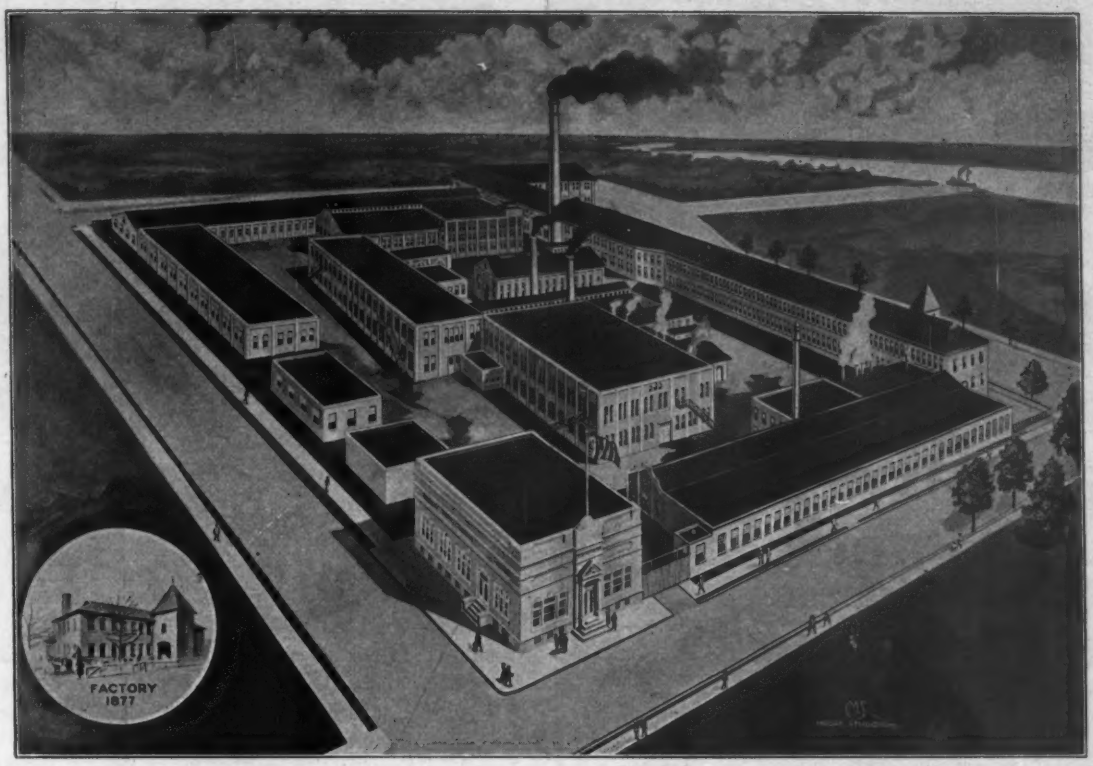


NO. 60 JORDAN ENGINE



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The finished sheet reflects the rubber covered roll that helped to make it. And when Cincinnati covers the roll you are assured of a uniform density that improves the appearance of your product.

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For nearly a quarter of a century we have specialized in this service to the paper industry, and our reputation for promptness is no less than for quality.

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A New Synchronous Motor for Low Speed Drives

THERE has been a demand for a motor that would synchronize with the progress made in low speed machinery. Westinghouse has known it for some time. And Westinghouse has been developing such a motor for some time—developing it with a full consciousness that only out of a special combination of characteristics would come the ideal motor for this type of service.

And here it is—the Type HR motor—with advantages that again proclaim the value of research, of broad-gauged engineering and Westinghouse first-hand knowledge of requirements. This new Westinghouse synchronous motor is more compact—also simpler.

Read the list of characteristics of this new Westinghouse motor. Then get the FULL story. It will interest you in a dollar and cents way—because out of *your* problems and to meet *your* requirements this motor has been developed. Simply ask for the "SyncHRoweld Story" and complete information will come by mail.

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Sales Offices in All Principal Cities of the United States and Foreign Countries

Characteristics

of the New Synchronous Motor

- High efficiency over the entire operating range.
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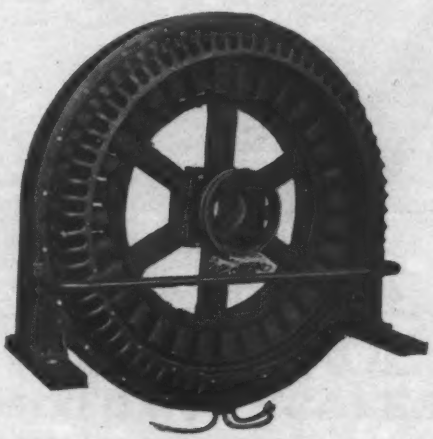
- Starting Torque 50%; pull-in torque 40%; pull-out torque 150% or greater.
- Full voltage starting with low current inrush.
- Variable fly-wheel effect.
- Fabricated steel construction of rotor and stator.



Westinghouse

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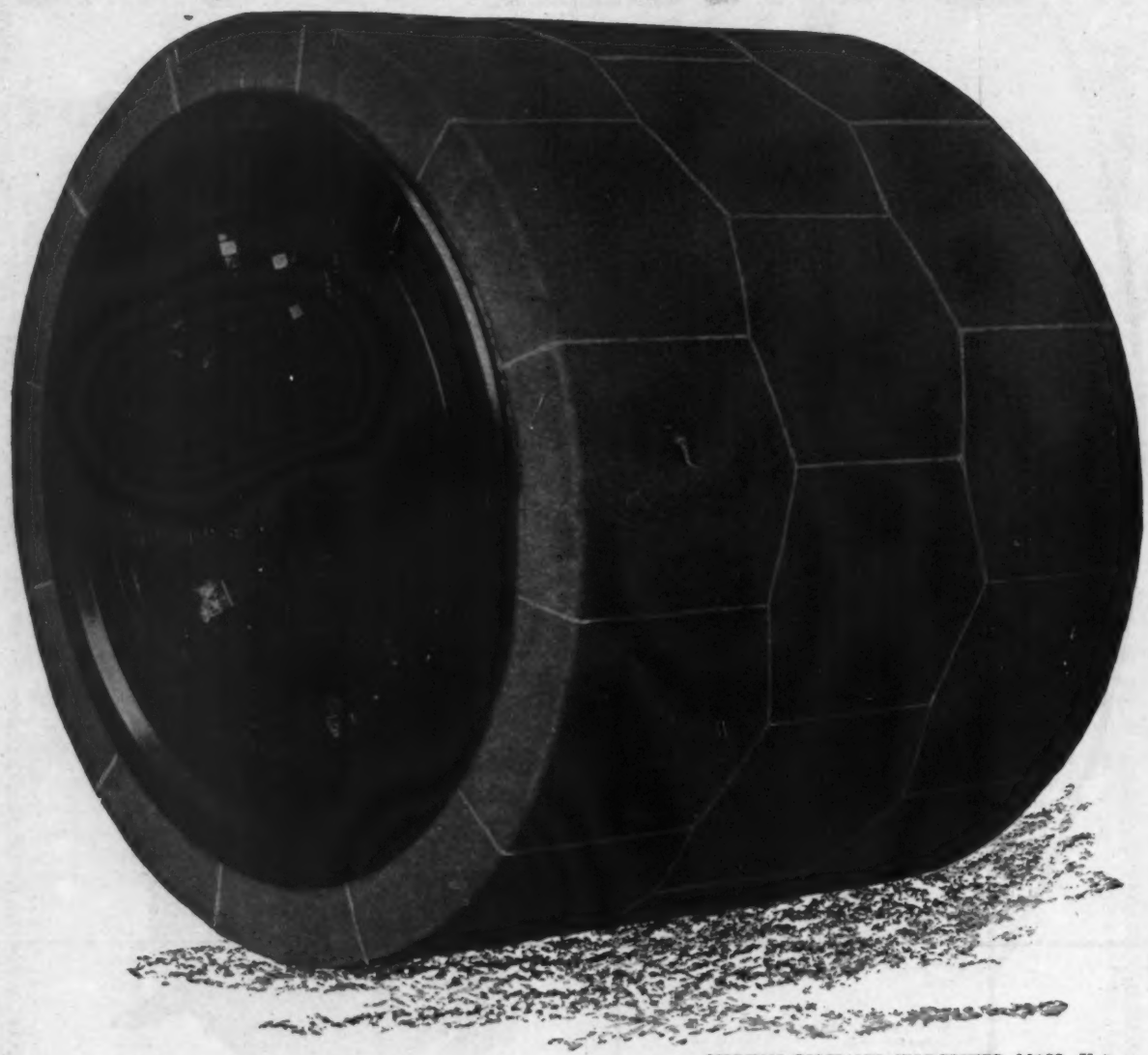
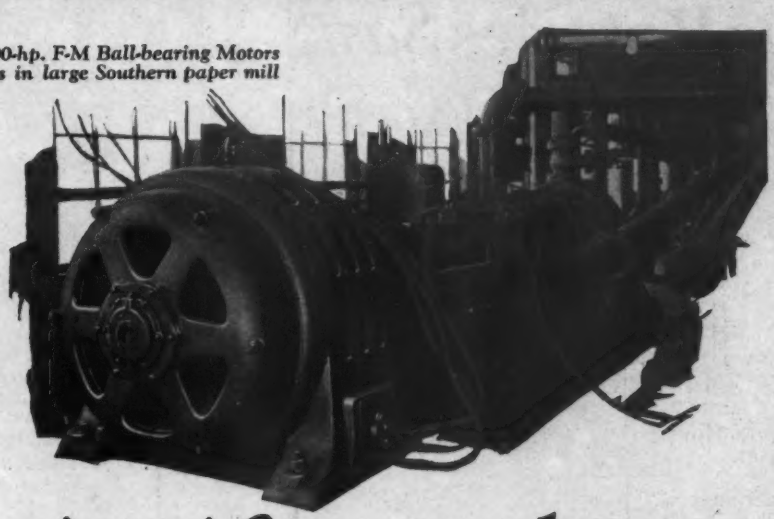


NORTON COMPANY, WORCESTER, MASS., U. S. A.
Norton Company of Canada, Limited, Hamilton, Ontario

NORTON
PULP STONES

One of three 200-hp. F-M Ball-bearing Motors driving Jordans in large Southern paper mill



This significant change

pointing the way to motor users

PROTECTED

Enclosed, ventilated—the F-M Type EH Motor is the *protected* motor for the difficult application where excessive humidity or other severe conditions exist. Rigid, cast-iron frame completely encloses this machine, with flanged inlet and outlet openings provided for the attachment of ventilating pipes. Liberally rated and designed throughout for enclosed operation.

What is the meaning of this significant change in the motor industry today—the startling increase in *ball-bearing* motors?

Even a few years back the sleeve-bearing motor was acceptable to a large majority of motor users. But now "closed" specifications which exclude the sleeve-bearing motor are increasingly common.

There can be but one explanation—Motor users have discovered that *ball bearings* have removed the weakest point in an otherwise almost perfect machine. They have found that the sealed ball bearing is far less subject to injury from grit, dust, etc.—that grease-packed ball bearings end the lubrication problem—that the elimination of shaft wear, made possible by ball bearings alone, means more years of *better* service.

Pioneers in the building of a complete standard line of general-purpose *ball-bearing* motors, Fairbanks-Morse has obviously played the major role in this universal trend toward ball-bearing construction. There is every indication that the motor of the future will be a *ball-bearing* motor—like the F-M motor of today!

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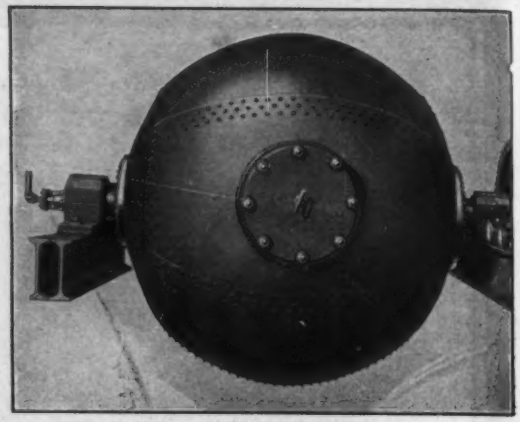
THE combination of pressure bleaching with the patented agitating feature, found only in the improved Biggs Cold Bleaching Engine, successfully handles pulp up to 35% consistency with a remarkable saving in time, labor and expense.

Biggs Rotary Bleaching Boilers and Digesters have been favorably known to practical paper men for two-score years. Biggs Cold Bleaching Engines are a worthy addition to the "family." You, too, can rely on Biggs for paper mill equipment covering every bleaching and cooking requirement.

May we hear from you?



Biggs Cold Bleaching Engine
(Patents Pending)

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The Biggs Boiler Works Co. Akron Ohio Est 1867

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GLOBE and CYLINDER
ROTARY BLEACHING BOILERS
for Years of Dependable Cooking and Bleaching

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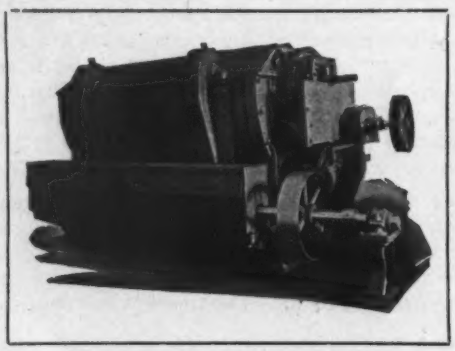

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"Moore & White" Screens produce quality paper whether used on Tissues, Kraft, Roofing Manilas or Book Paper. Lumps and slime spots are eliminated. Breaks on paper are thus prevented and continuous operation is assured.

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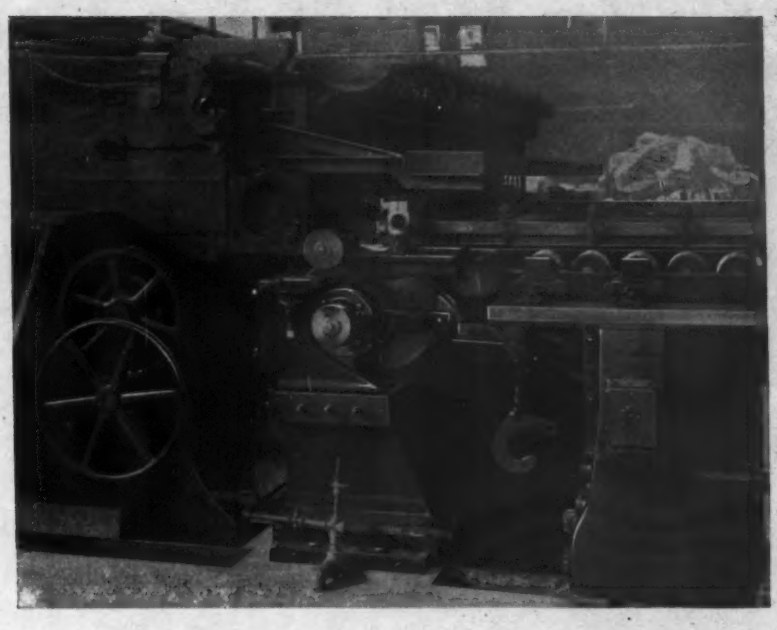

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As new as tomorrow! As simple as two and two!

SHAKE speed of 150 to 400 revolutions a minute. Wire changes in from 30 to 45 minutes. No vibration with a 5/8" stroke at 350 r.p.m. No noise. Greater production. And better formed paper at the higher speeds.

That's the new Champion Fourdrinier.

On the market less than six months the Champion Fourdrinier has already won a place for itself in the paper making industry—the most revolutionary step in paper making machinery since the invention of the first Fourdrinier.

It costs you nothing to let us tell you the complete story.

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Export Office:—15 Park Row, New York City
Builders of highest Quality Paper and Pulp Machinery
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BLACK-CLAWSON

CHAMPION FOURDRINIERS

Built with Machine-Tool Accuracy

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With your brains, supplemented by the use of our

KVP BOND PAPERS

you can nose your way through any business fog.

KALAMAZOO VEGETABLE PARCHMENT CO. KALAMAZOO, MICH.

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Stop this (drip-drip-drip)

Armstrong's Corkboard Solves Most Condensation Problems

DRIP—a troublesome nuisance, and a source of costly damage to paper in process and in storage. Stop it by insulating your roofs with Armstrong's Corkboard.

Armstrong's Corkboard roof insulation keeps the cold from "coming through," and excepting under the most extreme conditions, holds the temperature of the ceiling surface far enough above the dewpoint to prevent sweating and consequent drip.

In the machine room and other parts of the plant where the air is often full of free moisture, it is not always possible to prevent drip entirely, but Armstrong's Corkboard, by keeping condensation on the ceiling at a minimum, improves conditions materially, and increases the efficiency of other means adopted to dispose of water vapor.

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Free Book on Roof Insulation

The results of years of experience in dealing with the condensation problem have been compiled and published in book form. You may have a copy for the asking. Write for "The Insulation of Roofs to Prevent Condensation." Armstrong Cork & Insulation Company, 217 Twenty-fourth Street, Pittsburgh, Pa.

Armstrong's Corkboard Insulation

for the Roofs of All Kinds of Buildings

Do Your Rolls Run 1500 Hours on Glassine?

Butterworth Long Wear Calender Rolls are giving 1500 hours and more on glassine in some of the largest mills of the country.

A folder describing Butterworth Long Wear Rolls will be sent promptly upon request. Use the coupon if more convenient.

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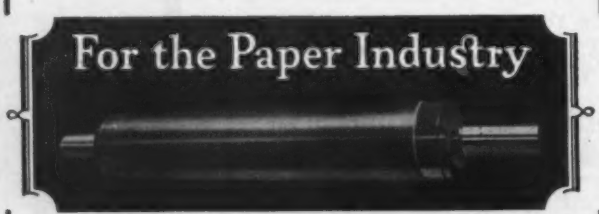

H. W. BUTTERWORTH & SONS CO.
Philadelphia, Pa.

Please send me your folder on Butterworth Long Wear Calender Rolls.

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We guarantee Multiple Gear Chain Blocks weather-proof and to work satisfactory in any position.

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READING PENNA. U. S. A.

Appleton Felts and Jackets

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The "Boxer" uprising in China, drew world attention to China and established the "open door" policy.

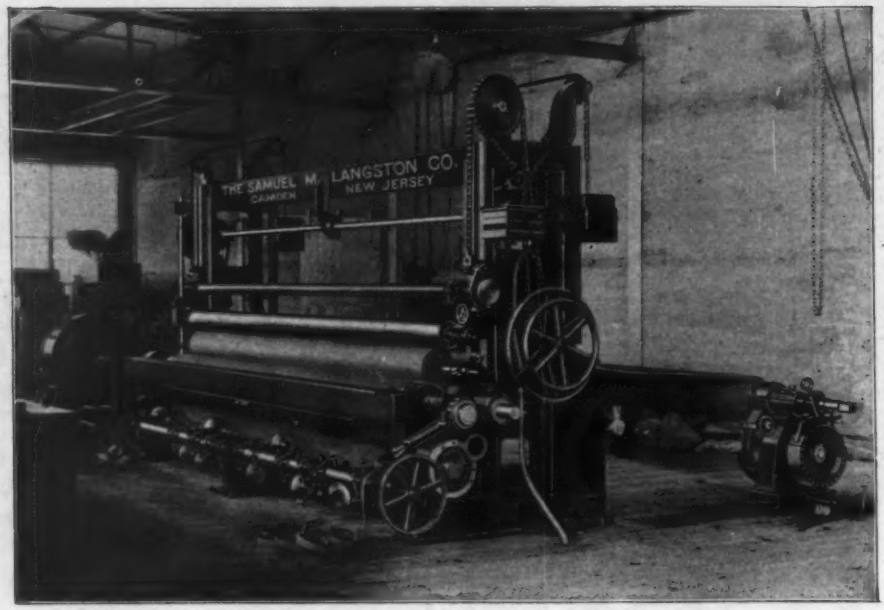
For nearly ten years before the "Boxer" uprising; Appleton Felts and Jackets were in constant use in the leading paper mills in America. During the years since 1900, Appleton Felts and Jackets have become the standard for quality and service.

The long life of Appleton Felts and Jackets is an outstanding reason for their general use. It is a durability that only a high grade pure wool, when made into felt in a plant that controls every detail of operation, can produce. The complete satisfaction of users is the final test of performance.

Write us about your felt requirements. Every detail will be given careful attention.

APPLETON WOOLEN MILLS
APPLETON, WISCONSIN

QUALITY SERVICE



One of Three Type "DA" Langston Slitters in Mill of Brown Paper Mill Company, Monroe, La.

The Langston *Shear-Cut* conquers the toughest sulphite sheet!

A SULPHITE sheet may be as tough as the hide of a rhino, but it doesn't bother the Langston Slitter. The Langston cuts the toughest sulphite sheet clean and all the way through and the cut is continuous with no narrow uncut strips or uncut fibres to hold the rolls together and make it difficult or impossible to separate them.

It's all in the Langston Shear-Cut. The Langston Shear-Cut method consists of two revolving cutter blades which make a cut like that produced by a pair of shears. These blades are always in contact with each other, making it impossible for even an inch of the paper to get by without being cut cleanly, completely.

Besides making a clean, complete cut, and easier separated rolls, the Langston Shear-Cut means rolls without any trace of lint or dust. And the Langston Winding principles insure rolls of just the degree of tightness you want, and hard-centered and of uniform density.

On sulphite—or on any other kind of paper or board—you can make better rolls on a Langston.

SAMUEL M. LANGSTON COMPANY, Camden, New Jersey
A. H. Cox and Company, Inc., Seattle, Washington

CLEAN
SHEAR CUT
CUT

LANGSTON SLITTERS

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FOR the coloring of bond and cover papers, attention is directed to the wide range of National Acid and Direct Dyes. We especially recommend

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for the efficient production of buff and goldenrod shades.

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NATIONAL DYES

PAPER TRADE JOURNAL

ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-SIXTH YEAR

Published Every Thursday by the

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LESLIE R. PALMER, President — GEO. S. MACDONALD, Vice-President & Treas. — F. K. HOPPIE, Secretary

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Eighty

Years of Specialization

1927 marks Dowd's eightieth year in the business of knife-making. These have been eighty years of specialization; the *sole* product of Dowd has been knives and every effort has been directed toward high quality. Today Dowd numbers among its regular customers many of the largest and most discriminating paper mills in America and we believe that this concentration (on specialization) upon *one* product has been the major factor in gaining and holding their patronage. They have found Dowd Knives dependable and of uniform quality year in and year out; they have found that dollars and cents savings is not always a matter of original purchase price, but rather of the efficiency at which knives operate over long periods.

You, too, can profit by patronizing knife-making specialists.

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MAKERS OF BETTER CUTTING KNIVES SINCE 1847

BELOIT, WISCONSIN

ESTABLISHED IN 1872

PAPER TRADE JOURNAL

With Which Is Combined

PAPER

Vol. LXXXV, No. 10 Thursday, September 8, 1927

Paper Production Decreases During July

Month Shows a Decrease of 9 Per Cent as Compared With June According to Figures Prepared by the American Pulp and Paper Association and Affiliated Organizations—Production of Wood Pulp of All Grades Shows Decrease of 12 Per Cent.

The July production of paper in the United States as reported by identical mills to the American Paper and Pulp Association and cooperating organizations, showed a decrease of 9 per cent compared with the June's production, following a 3 per cent increase in June over May, according to the Association's Monthly Statistical Summary of Pulp and Paper Industry. All grades showed a decrease in production as compared with June.

The summary is prepared by the American Paper and Pulp Association as the central organization of the paper industry, in cooperation with the Binders Board Manufacturers Association, Converting Paper Mills Association, Cover Paper Association, Newsprint Service Bureau, Wrapping Paper Manufacturers Service Bureau, Writing Paper Manufacturers Association and Paperboard Industries Association.

The figures for July for same mills as reported in June are:

Grade	Number of Mills	Production Net Tons	Shipments Net Tons	Stocks on Hand End of Month, Net Tons
News Print	71	118,929	119,840	27,764
Book	63	84,615	84,672	52,431
Paperboard	115	175,586	179,549	48,784
Wrapping	74	48,515	47,021	43,951
Bag	23	12,389	11,245	9,126
Fine	74	26,688	28,570	39,041
Tissue	49	12,309	12,411	15,931
Hanging	9	4,734	4,686	1,333
Felts	13	8,972	9,253	2,315
Other Grades	60	20,722	21,577	18,753
Total—All Grades		513,459	518,824	259,429

During the same period, domestic wood pulp production decreased 12%, this decrease being distributed over all grades. The July totals (mills identical with those reporting in June) as reported by the American Paper and Pulp Association, are as follows:

Grade	Number of Mills	Production Net Tons	Used Net Tons	Shipments Net Tons	Stocks on Hand End of Month, Net Tons
Ground Wood Pulp	88	70,409	81,249	1,706	142,217
Sulphite News Grade	38	37,602	35,572	2,649	8,861
Sulphite Bleached	22	21,036	19,418	1,595	2,990
Sulphite Easy Bleached	7	3,554	3,061	36	1,454
Sulphite Mitscherlich	6	5,903	5,335	508	496
Sulphate Pulp	10	15,967	14,714	1,139	3,452
Soda Pulp	11	15,372	10,571	4,404	2,775
Other than Wood Pulp	2	60	32	....	111
Total—All Grades		169,903	169,952	12,037	162,356

Aberdeen To Get Pulp Mill

[FROM OUR REGULAR CORRESPONDENT]

ABERDEEN, Wash., September 7, 1927.—Plans for the immediate construction of a $2,500,000 sulphite pulp plant on the former property of the A. J. West Lumber Company was announced here Friday.

The new pulp mill will be operated in connection with the West sawmill, which has been closed since the failure of the Hayes & Hayes bank.

A reorganization of the West Company business was completed Thursday, and Friday the receiver was instructed by superior court to settle the company's obligations preliminary to dismissal of the receivership. The concern will be known as the West Lumber & Pulp Company.

The new plant will adjoin the sawmill at Junction City. The first unit will employ between 350 and 400 men and the force will be increased 50 per cent when a contemplated paper mill is added. The West mill will resume operations October 1 and will cut hemlock exclusively.

Financial arrangements were completed Thursday when the West Company officials reached an agreement with the city of Aberdeen over the right of way for the city's new industrial water system pipe line on Van Winkle creek. At the same time arrangements were completed for the company's use of $350,000 worth of industrial water annually.

The new pulp mill is being incorporated under the law of Maryland, C. W. King, New York capitalist and connected with the DuPont interests, is president, B. T. McBain, Portland pulp and paper expert, and W. E. Johnson, Montesano banker, vice presidents; and A. B. Clements, Washington, D. C., attorney, chief counsel for the company.

Mr. McBain will be general manager of the plant and both he and Clemonts will take up residence here at the main offices of the company.

It is expected that the plant will be completed and ready to start operations within the next eight or ten months, according to company officials. The West brothers, Edward and W. A., former owners of the mill, will retain large holdings in the new company and will have charge of important mill operations. Although the company has been adequately capitalized by Eastern interests, some stock will be offered for sale locally, it was announced.

Among the local men who will be interested and stockholders in the concern are Attorney Theodore B. Bruener; W. H. Tucker, banker; A. T. Paine, E. K. Bishop and the Schaffer brothers, lumbermen; C. W. Yana, Westport, and H. W. Bale. The company has completed affiliations with many large corporations for the disposal of the lumber and pulp and others for the purchase of supplies.

Thousands of acres of timber land, heavily covered with hemlock, have been put under option and will be purchased as rapidly as necessary, it was declared.

Demand for Paper Quiet in Philadelphia

Resumption of Activities in Other Industries Will It Is Expected Soon Be Reflected in the Paper Business—Congoleum-Nairn, Inc., and Johns-Manville, Inc., May Merge—Wolf Bros. Build Large Structure To Be Occupied Early Next Year

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., September 5, 1927.—The demand for paper in the closing days of the month was far from the normal trend at this season when livelier interest usually accompanies preparation for the resumption of industrial activities following the Labor Day holiday. This year the late August trading fell far short of the anticipated volume of the business prospects that two months ago were predicted to supplant the abnormally duller trend in the paper market which has prevailed ever since the late Springtime.

Federal Reserve Reports on Paper

While August demand fell short of expectations they were no less disappointing than the paper markets for July as compiled from the business recordings made by the Federal Reserve Bank for the Third or Philadelphia District and issued in the past week. The report as made from a survey of the paper trade in all its branches shows that stocks on hand, book accounts, collections, labor employment and manufacturing were less than the corresponding month of 1926. In averaging the falling off in business the Federal Reserve compilation of the paper trade shows that the paper market for July of 1927 was 5½ per cent below that of 1926 and nearly 10 per cent less than the same month for 1923. However the Federal Reserve gives a brighter picture of the month of August which it reports as having witnessed an improvement in many lines of industry throughout the district. This general improvement should shortly be reflected in the paper market. Wholesale paper trade business in July amounted to $711,090 for the 111 firms reporting, a decrease of 6.2 per cent over the previous month and 2.7 over the same month a year ago.

Less Paper Consumed By Textile Trade

In this city the textile trades are the outstanding consumers of papers in both straight stocks or in the converted form. For many months the textile trades have been suffering from a dearth of orders and consequently have been small purchasers of paper. The announced plans during the week of the proposed suspension of the Dobson Mills, at one time the most famous carpet mills in the world with a history of 72 years, founded by James and John Dobson and only a few years ago operating several large plants with 6,000 hands employed is indicative of the waning business in this particular branch of the consuming trade. Another large consumer of paper specialties was the Verlenden Brothers, worsted manufacturers with a history of 50 years and located in Darby which dissolved recently and retired from the textile industry with which it had been associated as a dominating facfor throughout almost its entire career. Many other similarly prominent concerns are merely holding their own as the textile trades pass through a crisis of changing business and so eliminate this field as profitable sources for the paper dealers. There are a few large textile mills such as the Collins & Aikman Company controled by the General Motors Company that take considerable paper specialties and which so far this year have attained record business history but they are in the minority and are consumers of a limited line of papers handled through similar specialized manufacturers of the grades adapted for their needs.

Christmas Papers Appear

Manufacturers with holiday wares now are campaigning the local market with advance samples of Christmas specialties in a wide range of selection. In the fine paper field holiday numbers adapted for greetings in both flat papers and card stock and announcements are being displayed along with a varied assortment of papeteries, portfolios and decorative grades. While some orders are obtainable there has been a proneness to holding off actual orders pending the more definite trend of the market with the autumn months.

Coarse Paper Goods For Holidays

Those coarse papers dealers who are interested in the coming needs for the Christmas holidays are more interested in the present showings of decorative and plain grades of Christmas numbers used for many purposes in both the mercantile and manufacturing trades. Food wrappings, confectioners needs, glassine and waxed wrappers and casings, fancy Christmas wrappers, box coverings and trimmings and many lines that are consumed extensively for the holidays now are being ordered in anticipation of the coming autumn requirements as the mills and manufacturers display their samples to the Quaker City dealers.

Coal Situation And Paper Manufacturing

While a strike at the bituminous mines has been effective ever since late spring time the public has been hardly aware of the fact due to the lack of publicity which ordinarily is given to such a situation in the past. The result has been that the soft coal mines in the Western part of the state of Pennsylvania have been duller and suffering from lack of orders as never before at this season. As industry generally in the state and the paper manufacturing particularly has been suffering from similar depression the lack of adequate coal supply has not affected conditions materially for the time being. Anthracite miners are on a three-day week and have been operating at this scale for the past two months or more. However there was sufficient coal above ground to take care of requirements for a long period and so the curtailed schedule has not affected the limited demands of a prolonged summer dullness in the various industries that are heavy consumers of this fuel, and including the paper makers of this part of the country. Prices are held at normal summer rates although anthracite operators are announcing an advance with the current month.

Jute and Cotton Twines Advanced

A paradoxical situation exists in the announced raise last week in the jute twine market that partakes of a symphetic affiliation with the rise in the price of cotton and quite contrary to the factors that enter into the soaring of the latter. As cotton twine is subjected to a rise in prices every two or three days, due to the Government's report of adverse agricultural conditions in the cotton fields and the limited crops that are to be available this fall, there is a similar soaring in quotations on jute twines and cords in face of the announcement last week of the largest jute crop ever raised in India and in fact in the entire history of mankind grown this year and available to the manufacturers of twines within the next three months. The significance of the rise in the cost of jute twines is apparent to paper distributors. Many of the Quaker City dealers in commenting upon the raise in the prices of jute from 1½ to 2 cents per pound are convinced that this situation exists because of a sympathetic effect which brings the cost of this twine on a parity with the higher quoted cotton grades preparatory to the disposition of the present stocks on hand without loss in order to make way for the lower values which are bound to follow when the 1927 record making jute crop is available for conversion into twine a few months hence. The prospective scarcity of cotton cords eliminates at this time the competition which might occur with the jute market flooded with cheap raw materials and the present rise to higher quotations is believed to be an equalizing factor that may eliminate distu:bances in values when the future autumn markets will be subjected to the changes that govern

the raw material soon to become convertible into manufactured products under analogous market conditions.

Twine Manufacturer Announces Increase

The American Manufacturing Company, Front and Skunk streets, manufacturers of jute ropes and twines during the week sent out an announcement to the trade of the changes in price effective this month. The price of jute twines are advanced from 1½ cents to 2 cents per pound by the Company.

Price & Pierce Offerings To Dealers

William McGoldrick who covers the Quaker City trade and other eastern points for the Price & Pierce company, made the round of the trade in late August and secured a large quota of the kraft orders for the mills at Moss Point, Miss. These kraft mills were not within the zone affected by the floods in the Mississippi Valley last spring being 100 miles east of the river and away from the damaged western shores of the Mississippi. The mill has been operating uninterruptedly the entire year to date and much of its product has been shipped to Philadelphia distributors. The Price & Pierce company also secured orders for its pulp among the Quaker City manufacturers being large importers of Swedish Pulp and having extensive rights on timber lands in the Province of Quebec.

Congoleum-Nairn and Johns Manville To Merge

There has been talk of the proposed merger of Congoleum Nairn, Inc., a Philadelphia concern consuming largely paper specialties with Johns Manville, Inc., manufacturers of asbestos products going the rounds of the local financial market and reported in the New York Stock Exchange where the former company's stocks are listed, which is of interest to the paper trade in this city because of its affiliations with the manufacturers of floor coverings. It is proposed to exchange four of Congoleum shares for one of Johns Manville under the consolidation plans. The Congoleum Nairn company was organized under local ownership and had at its helm Frank P. Foster who for many years was affiliated with the paper dealers in the Quaker City as president of the Congoleum Nairn company having occupied that office from the date of organization and built up under his leadership. He remained as its president until last October when he was succeeded by A. W. Hawkes as the present president of the concern. Before joining the company he was affiliated with the Barret Company, Philadelphia, manufacturers of roofings, floorings and other tar and paper products of like character. Other officers of the Congoleum Nairn company are A. W. Errickson, chairman of the board; Sir Michael Nairn, vice chairman of the board; P. H. Nystrom, vice president; J. L. Bruss, secretary; L. H. Sanford, treasurer; J. M. Keating, assistant secretary and R. H. Anderson assistant treasurer, all elected last October at a reorganization meeting.

Wolf Brothers Under Expansion

The Wolf Brothers, long identified with the envelope, paper cup and bag manufacturing industry of Philadelphia now are underway of expansion through the construction of a large five story structure which will be erected on the plot adjoining the present home at 330 N. 12 street. Through the erection of the large addition to the present plant 15,000 more square feet of manufacturing space will be available by the first of the coming year. It is the intention of the firm to materially enlarge its manufacturing of bags when the new quarters are completed. In the larger home there will be combined the various auxiliaries of the firm such as the National Metal Edge Box Company and the Handlock Carry-bag Company which it recently acquired control of through purchase. These bags are produced in any size from 9½ by 6 inches to 15 by 13 inches. The firm also will increase its production of serrated edge type bags and the die cut bags. The Handlock Bags are patented and are constructed with the handle at the upper edge for convenience as carriers and are much in use by department stores and high grade specialty shops. Much additional machinery will be installed in the converting departments. The firm manufactures extensively paper cups and envelopes as well as all grades of bags from the cheapest to the higher qualities. It has large department store affiliations and chain store patrons as well as many other mercantile customers.

Discuss Pulp and Paper at A. S. M. E. Meeting

[FROM OUR REGULAR CORRESPONDENT]

SEATTLE, Wash., September 1, 1927.—Today finishes the regional convention of the American Society of Mechanical Engineers that has been in session at the Olympic Hotel for the past three days.

Not the least important of the many brilliant discussions was that of C. C. Hockley, Portland, Ore., consulting engineer for the pulp and paper industry. The large number of engineers and their friends who attended the session, gave special attention to the remarks of Mr. Hockley as he outlined the salient facts of the various phases of pulp and paper manufacture.

Mr. Hockley's subject was, "The Pulp and Paper Industry and the Northwest." His address supplemented a paper written and printed for the convention upon the same subject, a contribution of the Oregon section of the Society, which was graphically illustrated and diagrammed to show the trend of the industry in the Northwest. Mr. Hockley stated, in his synoptical talk that, "In a study of the economics of our situation we need not be frightened by talk of freight rates, cost of wood, costs of power, sales costs, etc., because it is after all not a question of the cost of any one item which will decide the result as to profit and loss but is the sum total of costs of the product delivered to the consumer, and in this respect the Northwest stands in a position second to none."

Another valuable contribution was made to the A. S. of M. E. convention by Bruce Wallace Ross and Seichi Konzo, of the Department of Mechanical Engineering, University of Washington, Seattle. The paper was entitled "Investigation of the Pulp and Paper Industry in the State of Washington" and there is a wealth of material to be found throughout its pages. The pulping qualities of the pulpwood species of Washington was treated in an intelligent manner and their classification also was portrayed in a way that the layman might find of interest.

The feeling running throughout the assembled engineers is that the pulp and paper industry must be an important factor in their future deliberations because of the prevailing tendency everywhere evidenced that it will in the near future supersede the lumber industry at first place.

Warren Mfg. Co. To Make Improvements

The Warren Manufacturing Company has recently awarded a contract to the H. K. Ferguson Company, Hanna Building, Cleveland, Ohio, for the design and construction of additions to their plant at Milford, N. J.

The work includes the following: Machine room, 81x225 feet, two stories, with the upper floor clear span and a runway for a 10 ton crane; finishing building 72x144 feet, two stories; train shed 25x180 feet; office building 30x70 feet, two stories; 12 double houses and two single houses.

The factory buildings are to have structural steel frames, creosoted plank roof insulated, concrete floors, and walls of brick and steel sash.

The houses are frame with slate roofs. Steel—400 tons. Estimated cost $300,000.

Raising Money for Kelso Paper Mill

PORTLAND, Ore., September 1, 1927.—The campaign to raise funds for the purchase of a site for a paper mill in Kelso, Wash., has proven successful. The initial option payment has already been made, and there are funds in the bank for the second payment which is not due for three months. This project is being sponsored by a Seattle syndicate as previously reported.

Ontario Paper Mills Are Well Booked Ahead

Consumption Materially Assisted by Requirements for Autumn Exhibitions and Fairs—Wrapping Paper Demand Moderate But Prices Remain Unusually Firm—Paper Box Plants Active in Certain Lines—Tissues in Good Request

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., September 3, 1927.—Business in the paper line is picking up some and the outlook for the coming month is favorable. There have been several factors contributing to the betterment of conditions, and one is the large amount of printing and consumption of paper created by the advent of the fall fairs, when much literature and publications of all kinds are distributed. The Canadian National Exhibition is now in progress in Toronto. It is expected that the attendance this year will reach nearly two million and many out-of-town buyers have arrived. They combine business with pleasure and the wholesalers have all withdrawn their salesmen from the road for the next fortnight. They are on hand in the various warehouses to greet all callers. The jobbers, on the other hand, prepare special attractions of odds and ends for the trade and entertain their customers to rides about the city, theatre parties, etc.

The mills continue busy and several have orders for weeks ahead. In the wrapping paper line, trade is only fair but prices remain unusually firm. Toilet, tissue and light weight wrappings are in good demand. Paper box plants are quite busy in special lines and the board market remains active. Manufacturing stationers have been rushed to the limit during the last few weeks getting ready for the opening of the schools and generally there is an expectancy of a good fall turnover in all branches of the trade, which feeling has been engendered by the harvesting of a bountiful crop in all parts of the province and the splendid weather prevailing during the past month.

The rag and paper stock business is fair, with an increase in price in white blank news and in No. 1 mixed papers. Collections are active and the mills are buying quite freely after a period of slackness on the part of some of them.

New Corner Stone Laid

A ceremony, unique in the business circles of Toronto, was performed recently in the laying of the corner stone of the new warehouse of the Wilkins Smallware Company, at the corner of King East and Princess streets, by Mayor Foster in the presence of representative bodies of the city council and Toronto business men and a gathering of several thousand people. The Wilkins Smallware Company is a large dealer and distributor of wrapping and other lines of paper and a number of merchants in these goods were on hand to extend congratulations. Ex-Mayor C. A. Maguire laid the corner stone and George Wilson, former President of the Toronto Board of Trade, presided over the gathering. John Firstbrook, President of the Firstbrook Box Company, and other neighboring business men, spoke, all congratulating James Wilkins, veteran head of the company, on his spirit of enterprise and predicting continued expansion for the firm.

Second Paper Unit Installed

A second unit has been installed by the Superior Paper Mills, of Thorold, Ont., which will increase the capacity of the plant. The new unit is turning out a specialty paper for pattern making and twisting and the machine is the first of its kind in Canada. A large number of orders has been received, which will take care of the production for several months. The new product is much admired for its quality and texture. The original unit of the plant produces a 70 inch trim sheet in bond, featherweight, waxing, antique laid and colored cover papers, as well as thin catalogue paper. The Superior Paper Mills is now erecting a brick extension to its plant, 54 x 90 ft., and business prospects are reported good. J. M. Cathcart is at the head of the company and R. E. Liptrott is secretary-treasurer.

Paper Man's Home Burned

Fire broke out recently in the home of R. J. Flynn, of the Buntin, Reid Company, wholesale paper dealers, and did considerable damage, several valuable heirloons being destroyed. Mr. Flynn, who resides in Weston, near Toronto, is a former Mayor of that town. In attempting to quench the fire, Mr. Flynn was scorched about the face, while Mrs. Flynn is suffering from shock. Owing to a local ordinance forbidding the sounding of whistles at night, it was impossible to use the fire siren and little could be done to check the spread of the flames.

Paper Mills Office Entered

Burglars entered several offices in the Northern Ontario Building, Toronto, recently, and secured several hundred dollars in cash. The safe crackers broke into the private office of J. H. Black, President of the Spruce Falls Power and Paper Company, on the twelfth floor and forced open his desk, but nothing was found missing by the staff although the premises were ransacked.

Paper Exhibits Attract Attention

At the Canadian National Exhibition, Toronto, during the progress of the big fair, several interesting and instructive exhibits by paper firms are shown and the Ontario Department of Lands and Forests has a very creditable and representative showing of the pulp, paper and pulp wood resources of the province in the imposing Ontario building, which is attracting much favorable attention. The White Pine Bureau also has a beautiful display of the superior qualities of this wood.

Other concerns, which are right to the forefront with varied and admirably arranged exhibits, are the Interlake Tissue Mills, in the Manufacturers Building, with a fine showing of colored and fancy tissues of all kinds in cloud effect, poster effect, floral designs and water lily and embankment landscape. In the Pure Food Building, the E. B. Eddy Company, Toronto and Hull, are showing a full line of toilet and tissue papers, wrappings, twines, etc., while in the Industrial building, the Charles V. Syrett Company occupies a commanding position, with exhibits from the Wayagamack Pulp and Paper Company, the St. Lawrence Paper Mills, Western Ontario Quebec Paper Mills, Canadian Nashua Paper Company, Sealright containers, Patent Cereals Company, Consumers Cordage Company and Rex dry paste. Other exhibitors in allied lines are the Dennison Manufacturing Company, of Canada, manufacturers of tags of all kinds, and the Appleford Counter Check Book Company.

News Print Situation Analyzed

In a front page editorial headed, "Dangers of over-expansion can be stopped by governments restricting the leases of timber lands," the *Financial Post*, of Toronto, one of the outstanding journals in the business and financial line, presents the following rather startling observation in reference to the pulp and paper industry in Canada, its present status and immediate outlook.

"The Canadian pulp and paper industry faces stern difficulties. Production is on a low scale. At the present price of news print this scale of operations is such that the mills cannot make sufficient allowance for depletion or pursue proper forestry methods.

"The bottom has dropped out of the market for mechanical pulp and prices for sulphite pulp are too low. These pulp mills cannot turn to the production of news print paper and so obtain

an increased manufacturing profit. Instead they sell to United States news print mills which are in direct competition with the depressed Canadian news print mills.

"The capacities of the news print mills are too far in excess of the present demand. By leasing further timber limits, the governments, both provincial and federal, have encouraged the erection of new mills, with the result that today the Canadian pulp and paper industry is in the doldrums and already sees more than two lean years ahead. All this is due to over-expansion.

"Large publishing or other United States interests, which have a market for news print, can come over to Canada, procure timber leases, erect mills and so prolong the period of hard times through which the industry is passing.

"Immediate action by the various governments involved is a necessity. The over-expansion of the industry can be stopped by the provincial and federal governments' refusal to grant further timber leases."

Spanish River in Good Position

While the profits of the Spanish River Pulp and Paper Mills, Ltd., who have plants at Sault Ste. Marie, Espanola and Sturgeon Falls, Ont., for the past fiscal year were, owing to curtailed production, below that of the previous year, the position of the company, however, is a good one. For the fiscal year ending June 30, 1927, the gross profits were $3,065,261, as compared with $3,743,448 for the preceding year. After deducting $665,903 interest on funded debt and other loans, and laying aside $100,000 for contingencies and Government taxes, there was left a net profit of $1,715,112, which compares with $2,195,902 for the preceding year. The surplus brought forward from June 30, 1926, amounted to $7,009,309, and this, together with the current year's profits, brought the total to $8,724,422. Dividends amounting to 7 per cent per annum required $603,365 for the preferred stock and $661,290 for the common shares. In addition, the proportion of dividends paid to bondholders was $140,517. The transfer for reserve amounted to $114,301, which compares with a similar transfer of $239,744 in the previous year. The surplus carried forward into next year was $7,174,948, as against $7,009,309, brought forward from last year.

The cash position of the Spanish River Company is not quite as strong as was the case last year but nevertheless is most encouraging. Current assets are shown at $10,488,732, as against $11,474,321 in the preceding year. Current liabilities stand at $1,852,557, which compares with $1,643,243 in the previous report. The most notable change in the current asset showing is the reduction in the cash on hand from $1,249,210 in the previous year to $268,840 in the current report. However, the holding of the company's bonds and those of affiliated companies were increased from $182,016 to $736,827. Accounts receivable were reduced from $2,340,416 in the previous year to $1,720,947 in the current report. Investments at cost are shown at $1,077,500, an increase of nearly $261,000 during the year. The company's property account increased by $1,427,000 to $3,814,181.

George H. Mead, president of the company, in his annual report, reviewed conditions generally in the paper trade as follows:—

"During the period under review the production of news print in Canada was materially increased by a number of new machines coming into operation, which has created for the time being a surplus tonnage. This has necessitated some curtailment in production, which, combined with lower average prices, accounts for the decrease in net profits as compared with the previous year.

"Having regard to the conditions referred to, the directors feel that the result of the year, to which many economies made in operating costs have largely contributed, should be regarded as satisfactory.

"There has been a substantial increase in the 'Property Account' due to expenditures on additions and improvements to the various mills to increase efficiency and to reduce operating cost, also to outlays on power equipment and water conservation. The directors feel that these expenditures will be amply justified by the results obtained.

"Pursuing the policy of enlarging the company's interests in the development of the paper industry in Canada, your directors have acquired a holding in the Ste. Anne Paper Co., Limited, recently built at Beaupre, Que., and now in operation.

"The strong cash position as indicated in the last report, has enabled the company to make the required expenditures on Property Account, and to add to its investments in affiliated news print companies without raising additional capital for this purpose. It will also be noted that the bonded indebtedness of the company has been reduced during the year by $583,966.

"On May 1 the resignation of P. B. Wilson as vice-president and comptroller of the company was with regret accepted to permit of his undertaking the very important work of treasurer of the newly-formed Canadian Newsprint Company. The board wishes to express its great appreciation of Mr. Wilson's loyal and most valuable service extending over a period of more than thirteen years, and its pleasure that he is able to continue an important adviser as a director of our company."

Notes and Jottings of the Industry

The office of the Galt Paper Box Company, at Galt, Ont., was recently broken into and a sum of money stolen from the drawers of a desk.

Fred L. Ratcliff, head of the Ratcliff Paper Company, Toronto, is one of the directors of the Canadian National Exhibition, Toronto, and is in charge of the exhibits in the big Manufacturers Building.

William Innes, of Montreal, eastern representative of the Interlake Tissue Mills, Thorold, has returned, after spending an enjoyable holiday trip at various points.

W. J. Gage & Co., Ltd., Toronto, manufacturing stationers has a most attractive display at the Canadian National Exhibition in which they are featuring Holland Linen paper, the "write gift" for every occasion. The company presented each caller with a blotter containing a picture of the Prince of Wales, who was in Toronto last week and formally opened the new "Princes Gates."

The Hawk Lake Lumber Company, Cochrane, Ont., who are large dealers and exporters of pulp wood at various points in Northern Ontario, have bought the plant and property of the Double Diamond Lumber Company, at Timmins, Ont., which will be put in operation.

Business in the twine line is very good at present and there has lately been a raise of four cents per lb. on cotton twines and two cents on jute. Buying is going on quite freely.

Paper Specialists Arrive in Longview

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., September 1, 1927.—Six experts in the manufacture of paper arrived in Longview, Wash., late in August, to become associated with the new Longview Fiber Company's new plant, which is being erected at a cost of approximately $3,000,000 and which will start operation about October 1.

The men who arrived came from the Thilmany Pulp and Paper Company at Kaukauna, Wisconsin. They are Herman Hoehne, who will be general foreman; Carl Fahlstrom, chemist; Julius La Pointe, with recovery department; John Schuh, Helmut Cruse and William Van Dinter in the digester department. It is said that Walter Wenzel, who will also be in the digester department, is en route to Longview.

A crew of 520 men is now at work on this plant, the number having been repeatedly increased to insure completion on schedule. Most of the machinery is in place, the last shipment being expected early in September on the motorship Lancaster.

The principal item of raw material, Douglas fir, is being purchased at the Long-Bell plants, where two chippers have been operating for some time.

Boston Paper Market Becomes More Buoyant

Despite Inclement Weather Conditions, Summer Activity Has Been Greater Than Anticipated —Box Board Business Continues Satisfactory, With Quotations Ruling Very Firm—Paper Stock Values Considerably Stronger

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., September 5, 1927.—"Things are looking up" generally in the paper trade. With the advent of September some of the dealers are receiving a greater volume of orders. There is a better tone in the market. As previously noted in these columns, it has been estimated that the summer activity has been greater than anticipated.

The rainy weather, however, has decreased materially the number of visitors to the shore resorts, so that as a result the dispensers of ice-cream and other refreshments using paper dishes, etc., have not needed to replenish their supplies so much.

This loss of business cannot be made up. The rainy weather has affected the retail business also, but it is generally felt that this may be made up in part, at least, for if shoppers don't buy what they need one day they can get it another. In the case of the shore resorts, however, as is well known, the attractions are usually closed after Labor Day.

Box Board Prices Stronger

Prices of box-board are becoming considerably stronger on account of the advance in paper stock. Single Manila pulp lined board is very firm at $57.50 to $62.50, and other grades of box-board are quoted at the same prices of a week ago. Business in box board continues good.

Old paper values continue firm, with an appreciation in some cases. No. 1 books, heavy, are now quotable at $1.25 to $1.30 per 100 pounds, compared with a previous range of $1.17½ to $1.30. Other advances are noted. Old kraft is worth $2.05 to $2.25, compared with a previous range of $2.00 to $2.25; No. 1 mixed paper, .62½, compared with .60; overissue news, .80, compared with .75; old newspapers .65, compared with .60. Chip box-board remains firm at .65.

In some quarters rope is reported to be showing a soft tendency, due to the fact that more wood pulp, kraft, and lower grade papers are used in preference to rope fiber, although prices are unquotably changed. Foreign Manila rope is quotable at $3.75 as the minimum price, and domestic at $4.25 to $4.37½.

New and old domestic rags continue unchanged, and there is no indication of a decline. Prices are none too high, however, according to the trade, and it is reported that the smaller dealers have stopped grading rags because prices are so low.

New England Paper Men to Meet

A very good attendance is expected at the meeting of the New England Paper Merchants Association, to be held at the Harvard Club of Boston, September 15. One of the objects of the meeting is to discuss fully the subject of carton packing of paper in preference to case packing.

Linton Bros. Elaborate Exhibit

Linton Bros. & Co., Fitchburg, Mass., have produced an elaborate exhibit set of printed specimens of white and colored Bristols. Norman Harrower, president of the company, developed this plan in order to show the printer some effective and unusual methods in employing Bristols in advertising work or advertising pieces. Many printers and paper men have felt that Bristols are restricted to the announcement field, filing, and index purposes, but the manufacturers of this line now display the adaptability of effects to menus, covers, sales-folders, etc. These sets go to the salesmen for their use in direct contact with the buyer of paper to show not only the advertising and printing possibilities of Bristols, but to convey as well an idea of the physical character of weights, colors, and finishes. Linton Bros. & Co. have already received highly favorable commend from the paper salesmen on this demonstration plan.

News of the Trade

John Carter & Co., Inc., are putting a new line of railroad blank on the market which they call John Carter's Unco. The same Company is issuing a unique folder to which are attached samples of Waterfalls Bond in white and distinctive colors. Opening the leaflet shows their trade symbol, a waterfall, amid picturesque scenery. The Waterfalls Bond is used for from bank deposit slips to first-class sulphite bond letter-heads.

The A. M. Collins Manufacturing Company, of Philadelphia, is putting out a new laid cover, called Laidmark, with special colors and unusual strength, which will soon be stocked by all their distributors, including those in Boston. The colors are arranged for the "more emphatic display effects" that can be accomplished with one or more printings. The cover is to run as a companion paper to the company's famous Laidtone coated book papers. Elaborate sample books are now in preparation.

Tileston & Hollingsworth Company has issued a "Directory of Artists" for the use of the printer in "creative printing." The directory contains the names of fourteen artists with a brief sketch about each and a reproduction of their work. They cooperated with the Tileston & Hollingsworth Company in making the book. The cover is Milton Cover to match the Milton Text which is made in eight colors.

Arthur C. Hall, treasurer of John Carter & Co., Inc., is at his camp, at Connecticut Lakes in Northern New Hampshire for a vacation.

G. E. Emerson, of E. Butterworth & Company, Inc., has returned from a vacation which included an automobile trip to Sherbrooke, Granby, Waterloo, and West Shefford, Quebec. Mr. Emerson came back by way of the White Mountains, stopping at North Woodstock, N. H.

De Pere Mill Not Quite Ready

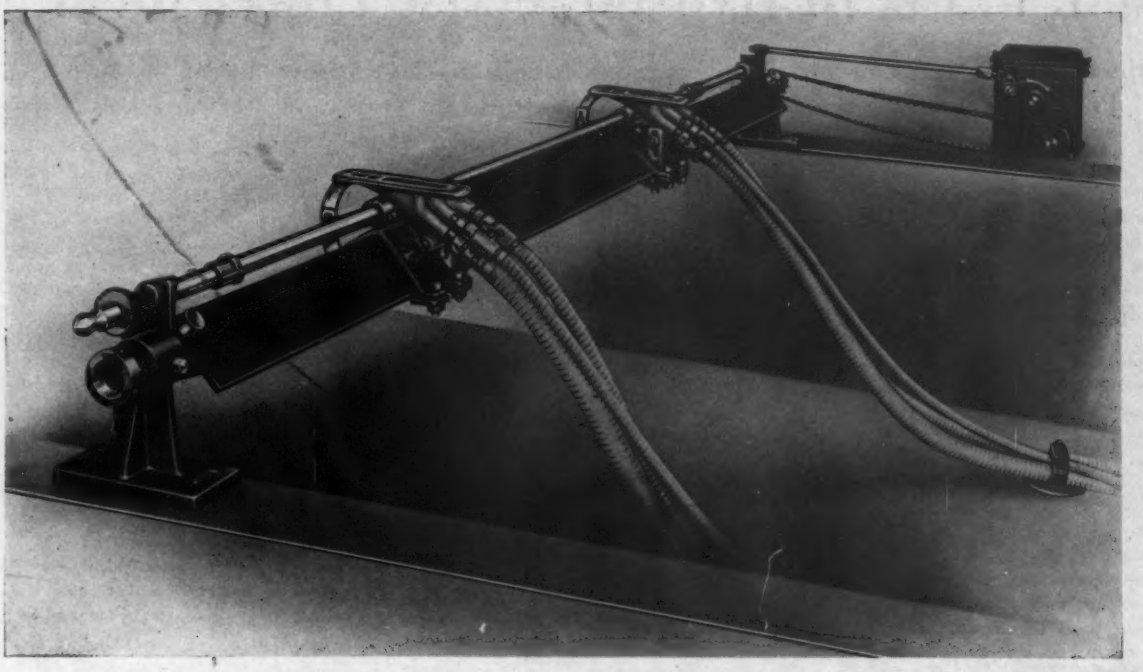
[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., September 3, 1927.—Unexpected delays made it impossible for the Nicolet Paper Company to start operation at De Pere, Wis., at the time announced. Absence of two large turbines upset the operating plans, and it was necessary to ship these by express from Pennsylvania in order to expedite matters. The plan was to start one machine at once on glassine papers, and the second later. Both are now in readiness for operation, and as soon as erection of the turbines is completed the new corporation will begin production. The employed force at the start will be 125 persons, according to H. C. Hanke, manager. The mill is the one purchased last spring from the American Writing Paper Company.

Machinery for Hawley Pulp & Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., August 30, 1927.—The American Hawaiian steamer Hawaiian is expected to dock at Portland late in August loaded with the first of the big machinery units for the new plant of the Hawley Pulp and Paper Company at Oregon City. The shipment will be unloaded in Portland and taken over the electric line of the Portland Electric Power Company to Oregon City. This first shipment will be about one carload. Three more carloads will be received early in September it is expected, aboard the Iowan, another steamer of this same line.



In the words of one paper maker:

"We think that the Vickery Felt Conditioner is one of the greatest steps forward in paper making that has been made in recent years.

"The features that we like particularly are: A clean felt at all times, insuring maximum water removal, minimum breaks, such as are caused by partially filled felt. Aids in producing a uniform flat sheet. Eliminating lost time for felt washing. Its positive action and fool proof construction and last but not least the longer life it gives to felts.

"We expect and get about 25% more wear from our felts since installing the Conditioners."

Of 425 Vickery Felt Conditioners sold in the United States, 274 represent *repeat orders.*

The Vickery Felt Conditioner

BIRD MACHINERY

BIRD MACHINE COMPANY, SOUTH WALPOLE, MASSACHUSETTS

I. P. Co. In Hydro-Electric Power Field

Gatineau Power Co., One of the International's Subsidiaries, Is Now One of the Two Leading Power Companies in Canada—News Print and Pulp Interests Look Forward Anxiously To The Expected Fall Revival in Demand

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., September 5, 1927.—The growth of the influence of the International Paper Company in the hydro-electric power field in the Province of Quebec is attracting considerable attention. Its subsidiary, the Gatineau Power Company, which has only been in existence a short time, is now one of the two leading power companies in Canada, its plants having an aggregate designed capacity of over 600,000 horsepower, greater than the developed horsepower on the American side of Niagara Falls. The company operates and owns in the Province of Quebec thirteen hydro-electric developments on the Gatineau, Petite Blanche, Blanche, Petite Nation, Rouge, North and Ouareau Rivers, and on Gordon Creek. At Paugan, the company has under construction a third hydro-electric plant on the Gatineau River. Work is well advanced on this development and it is expected that the plant will be generating electricity by the fall of next year. Delivery of electric energy to the Ontario Hydro-Electric Power Commission begins October 1st, 1928.

While the Chelsea and Farmers' plants on the Gatineau River, now nearing completion are built to house five units each, but four will be installed initially. The other units at these plants will be installed when the demand for electric energy justifies it. At Paugan six units will be installed, the powerhouse having capacity for two more.

The power plants of the company are interconnected by a system of modern high-tension transmission lines, thus insuring greater continuity of power supply and a more complete use of generating facilities.

Over three hundred and sixty miles of high-tension distribution lines carrying the current from the plants of the company serve an area of over 4,800 square miles. This district has a population of about 220,000 and lies between Hull and Montreal, north to Rawdon on the Ouareau River, and south to Coteau on the St. Lawrence River.

Reduction in Stumpage Rate

The New Brunswick Government has announced substantial reductions in the stumpage rates upon hard wood cut on Crown lands in the Province for the coming year. The former rate on hardwood logs was $4 per thousand feet and the new rate is $2. Under the new schedule the rate on white birch spoolwood is reduced from $2.50 to $2.00 per 1,000 feet and, as regards poplar, the new rate is 90 cents per cord instead of $1.75 per 1,000 feet. Only one change is noted in softwoods i.e., as regards cedar logs. The previous charge was $2.50 per 1,000 feet but now it is placed with spruce, fir, etc., at $3 per 1,000 feet.

Market Causes Uneasiness

Now that the holiday season is over, news print and pulp interests are looking forward anxiously to the expected fall revival in the demand for news print and ground pulp. The summer season has been distinctly disappointing, for while there has been no slump, the market has not only failed to keep pace with increasing production, but has actually shown a slight falling off as compared with last year. Producers here are beginning to think that weather conditions have something to do with the falling off of Canada's export market. For some years past, lack of water in the rivers in the New England states and in the Scandinavian countries has each year effectively curtailed production in these countries, with consequent advantage to Canada, where water has been plentiful for the hydro plants. This year there has been a steady supply of water in all the pulp and paper producing countries. Pulpwood prices have already been slashed to the point where there is very little profit for the producer, and although, with curtailment of production, news print prices have remained fairly steady, the question is now being asked whether conditions in the news print markets are merely seasonal, or at worst only temporary, or whether they foreshadow a period of intense international price competition. The next few months will probably tell the tale. Meanwhile producers are anxiously studying their cost sheets and rapidly perfecting the machinery of co-operative marketing.

National Fall Meeting Program

CHICAGO, Ill., September 3, 1927.—N. A. Schoenbucher, of the National Paper Trade Association, announces the following program for the fall meeting of the association. It will be noted that the dates have been changed from those announced at an earlier date. Mr. Schoenbucher states that this change was occassioned by the opposition of a good many members to the Sunday meeting.

The Congress Hotel Chicago, has been selected as the meeting place. This is a very desirable location, being close to the loop to allow easy access to transportation and entertainment facilities.

FINE PAPER DIVISION.

Monday, October 24.

10:00 A. M., Central Carton Packing Committee, Room 1124
10:00 A. M., Marketing Committee, Room 1120
2:30 P. M., Administration and Executive Committee, Room 1124
7:30 P. M.,Board of Directors, Room 1120-24

Tuesday, October 25

10:00 A. M., General Meeting, Florentine Room.
2:00 P. M., Survey and Efficiency Committee, Room 1124

Wednesday, October 26

2:00 P. M., General Meeting, Florentine Room.

At this meeting there will be general discussions of carton packing, marketing and survey committee matters.

WRAPPING PAPER DIVISION.

Monday, October 24.

10:00 A. M., Twine Committee, Room 1174.
10:00 A. M., Gummed Tape Committee, Room 1170
1:30 P. M., Tissue and Trade Customs Committees, (Joint meeting) Room 1170
3:30 P. M., Executive Committee, Room 1120
7:30 P. M., Board of Directors, Rooms 1120-24

Tuesday, October 25

9:30 A. M., Survey Committee, Room 1120
2:00 P. M., General Meeting, Florentine Room.

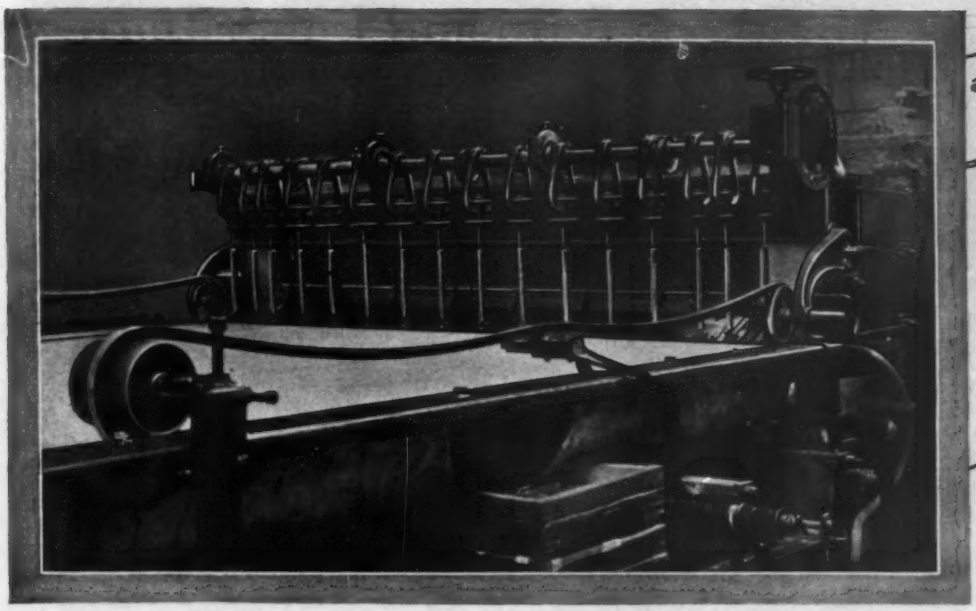
Wednesday, October 26

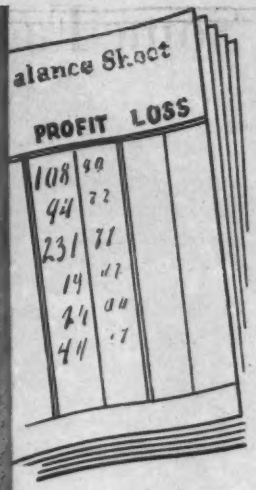
9:30 A. M., General Meeting, Florentine Room.

At this meeting interesting displays and management problems will be shown in their connection with National Profit Control.

American Gets Offers for Oakland Mill

HOLYOKE, Mass., September 6, 1927.—The American Writing Paper Company is in receipt of several offers for its Oakland paper mill but as yet has closed with no party. The company is chiefly interested in the offer of Charles W. Stevens proprietor of the Stevens Paper Company at Windsor, Conn., and of the Macco Manufacturing Company of this city.





A VOITH INLET Writes Its Own *Testimonial on the Profit Side of Your Ledger~*

Better paper at a lower cost. Increased production more than 10% over the old slice method. Saving of wires so that they last from 10% to 15% longer. Fewer wire breaks causing shutdowns of paper machines. Paper of uniform caliper. Accurate control of stock as it flows onto the wires. Lumps and foam spots less apt to form.

These are some of the detailed items shown by a study of the ledgers of any mill that has installed and is operating a Voith Stock Inlet. Over 200 Voith Inlets are now in use and in every instance showing profitable operation. The number in use in mills varies from one to thirteen.

This wide acceptance of Voith Inlets is a real testimonial to its ability to write profits on the right side of the ledger.

The Voith Stock Inlet can be used in the production of your paper. Let us show you why. An attractive booklet with all particulars about the Voith Inlet will be sent you upon request. *Write for your copy now.*

VALLEY IRON WORKS CO.

Machinery for Paper and Pulp Mills

APPLETON WISCONSIN

New York Office: 350 Madison Avenue

Western Mfg. & Sales Div., Smith & Valley I. W. Co., Portland, Oregon.

Some Facts About the Pulp and Paper Industry

Written for the Benefit of the Non-Technical Reader

By William S. Dowd, Vice Pres. and Gen. Mgr., Northwestern Pulp & Paper Co.

The paper industry is about three thousand years old, having been started by the Chinese. Prior to about 1865 practically all paper was manufactured from some form of rags. In 1719, Reaumer, the famous French scientist, discovered that the American wasp was making a paper out of wood fiber, and suggested that this source of supply be investigated. Twenty years later he again referred to it. It was not until 1866, however, that a practical commercial mill was built for the production of sulphite wood pulp. Since that time the industry has grown until the production of pulp and paper has reached the tremendous volume now being manufactured.

Classification of Pulp

The manufacture of pulp from wood may be divided into four classifications. First: Ground Wood, or Mechanical Pulp, which is made by holding a block of wood against a rapidly revolving grindstone. There is no chemical treatment in this process, and the product is largely used for the manufacture of newspaper and tissue papers; Second: Sulphite Pulp, which is made by treating the wood with lime bisulphite in a digester into which steam is introduced at a pressure of from 70 to 100 lbs.; Third: Sulphate, or Kraft Pulp. The word "Kraft" comes from the German, and means "strong," and is applied to the products with which we are all familiar, such as brown wrapping paper, cardboard cartons and other similar products in which whiteness is not important. This is also a chemical process in which the wood is treated with a chemical in the presence of heat; Fourth: the Soda Process, in which wood is treated with caustic soda, producing what is known as Soda Pulp.

In the uses of these four kinds of pulp, Ground Wood Pulp constitutes 75 per cent approximately of a sheet of newspaper, the other 25 per cent being Sulphite Pulp of a low grade. Sulphite Pulp has the largest use of the three forms of chemical pulp, as it enters not only into news print, but into many forms of writing or bond paper, a large percentage of book paper, and into many forms of wrapping paper and cardboard.

All of these products are manufactured on the Pacific Coast at the present time, mills being located approximately as follows: Ground Wood in the various mills of the Crown Willamette and the Zellerbach Corporations, and one or two of the smaller mills which are just coming into production; Sulphite Pulp by the large paper corporations and exclusively by the pulp mills in Bellingham and Anacortes. The Northwestern Pulp and Paper Company at Tacoma and the Shaffer Box Company of Tacoma are also designed to produce Sulphite Pulp. Soda Pulp is manufactured by the Cascade Paper Company of Tacoma and the Everett Pulp and Paper Company at Everett, Washington, this latter being one of the oldest and most profitable of the pulp and paper manufacturing companies on the Pacific Coast, having been in existence for approximately thirty years. Sulphate Pulp and Paper has been manufactured by Crown Willamette Company for some time, and is now being manufactured by the new mill at St. Helens, Oregon, and shortly the large plants at Longview, Washington, and Pt. Townsend, Washington, will also be manufacturing Sulphate Pulp and Paper.

Varieties of Wood Suitable for Pulp Manufacture

Spruce has always been the best wood for manufacturer of pulp due to its light color and fiber strength. Next to this in order of importance is Hemlock. Other woods being used in various amounts include Poplar, or Cottonwood, Birch, Alder, Balsam, Fir, and some of the others to a limited extent. Spruce is used almost exclusively in the mechanical or ground wood pulp mills, although the Western Hemlock is becoming a favorite on the Pacific Coast for this purpose.

In the production of Sulphite Pulp we find Spruce, Hemlock and White or Noble Fir, being used to the largest extent. In the Sulphate process on account of the lack of color requirement almost any variety of wood can be used that is suitable for the production of pulp fiber. The Southern Pine region now contributes the largest tonnage of Sulphate Pulp. Any wood which contains pitch or rosin to any extent is not suitable for the production of Sulphite Pulp. The Soda process also uses Hemlock, Cottonwood and Douglas Fir.

Classification of Waste Wood

In considering sources from which a pulp mill in the Northwest can secure wood for its raw material, we have the following: First: standing timber; second: the waste left in the woods by logging operations. (It is conservatively estimated that forty per cent of the standing timber on a tract cannot be made into merchantable lumber, but that a fairly large percentage of this forty per cent can be converted into pulp. The possibility of such use should appeal to the practical logger and lumberman.) Third: In the waste from sawmill operations, the slabs which are now largely used for the production of lathe, broom handles and fuel. This is one of the best sources of material for the pulp mill, as the sap wood produces the largest yield of pulp. Fourth: The other waste in the sawmill operations include edgings, trimmings, planer ends, small slabs and similar material. While it is true that this can be bought at the present time for a comparatively low price, from the pulp mill operating point of view, it is the most expensive raw material to handle, and figuring on the cost of raw material per ton of pulp produced it has been found that there is little, if any savings over slabs or cord wood.

Construction Costs

The experience in the construction of pulp mills in the East during the history of the industry indicates a fairly standardized cost of construction. This can be very materially lowered in the Pacific Northwest because it is not necessary to provide heating equipment and the mill type of construction, which is entirely suitable, is much less than the very heavy, reinforced concrete or brick construction which is used in the East. Where a tie-up is made with a producing mill it is usually possible to obtain power and steam without building a power plant for the pulp mill.

Operating Costs

The difference in costs of electricity, in the Pacific Northwest as compared to the East, is too well known to require further comment.

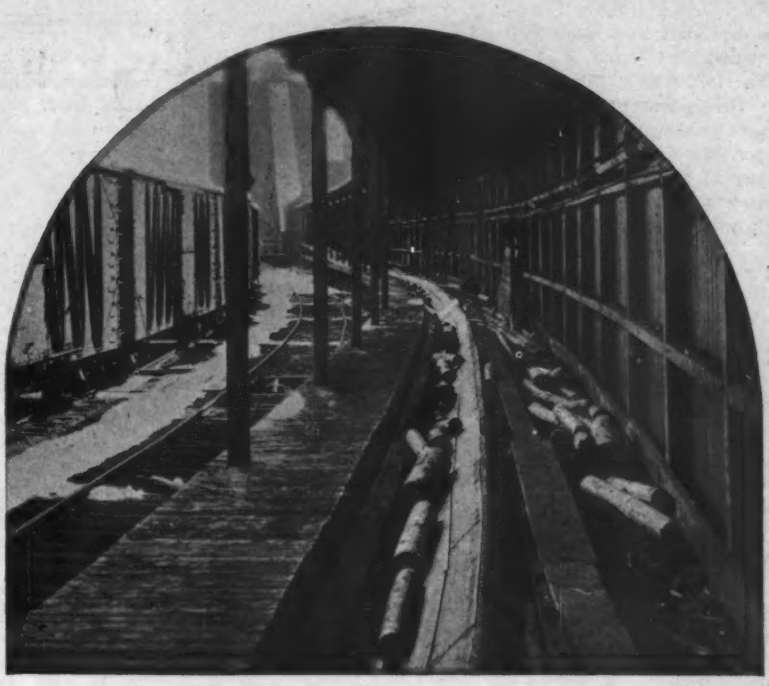
The production of steam using hog fuel or sawmill waste, as against Eastern coal at from $8.00 to $10.00 a ton, is one of the most important items showing why pulp can be produced out here at a much lower cost than in the East.

The raw material which is available in our mills is close to the pulp mill in the Northwest, whereas Eastern mills are now bringing in their wood at distances from one to six hundred miles. This is another very large item of the reduction of costs of production.

Other factors which enter into the savings in cost of production are, the ideal climatic conditions, the availability of transportation by rail or water, reasonable insurance rates and comparatively low taxes, ample supplies of excellent water at a low cost, and

Jeffrey Chains for Every Service

Jeffrey Reliance Chain for drives, elevators and conveyors moving pulp mill materials.



An Unusual Job

Theory says, "A Cable Conveyor cannot follow a horizontal curved path because the tension pulls the cable out of the trough."

But here is a Jeffrey Cable Conveyor doing just that very job, following the curved spur of railroad track up to the mill.

And the photograph shows that the cable is doing the job well.

Jeffrey engineers often solve the "unusual" problem in paper and pulp mill material handling.

The Jeffrey Manufacturing Company

931-99 North Fourth St., Columbus, Ohio

New York	Rochester, N. Y.	Pittsburgh	Boston	Cleveland
Buffalo	Philadelphia	Scranton, Pa.	Cincinnati	Detroit
Chicago	Milwaukee	Denver	Los Angeles	Charlotte, N. C
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50 YEARS OF SERVICE TO INDUSTRY

JEFFREY

MATERIAL HANDLING EQUIPMENT

Jeffrey Products
Elevators—Conveyors
Portable Loaders
Coal and Ashes Handling Equipment
Skip Hoists
Chains and Attachments
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Crushers—Pulverizers
Sand and Gravel Handling, Washing and Screening Equipment
Locomotives
Coal Mine Equipment
Tipple Equipment
Ventilation Fans

low depreciation on machinery and equipment because of climatic condition.

The following statistics were obtained from the publications of the Department of Commerce of the United States, and the figures produced by the Statistical Department of the Pulp and Paper Association. Such sources are beyond question in the accuracy of their statements, and as will be noted after a careful consideration of them, show why the manufacture of Sulphite Pulp will be not only a profitable but a permanent industry:

Data from U. S. Dept. of Commerce

Production of Sulphate Pulp for the last ten years has increased 45,000 tons a year, largely from Southern Pine regions. This does not compete with Sulphite Pulp from the Northwest, but indicates the expansion of the paper industry of the United States.

The consumption of pulp wood for 1926 was greater than in any year since 1899, when records were started.

PRODUCTION TABLES

Year	Total Cords Wood	Sulphite %	Mechanical %	Soda %	Sulphate %
1926	6,766,000	46.5	25.5	13.3	14.7

This gives an idea of the market requirements for Sulphite Pulp as compared to other varieties.

AVERAGE VALUES OF PULP PER TON (1926)

Mechanical	Sulphite	Soda	Sulphate
$30.51	Unbleached $51.56 Bleached $80.68	$70.01 Bleached	$47.64

The bleaching of pulp costs from $11.00 to $15.00 a ton. The production of Sulphate and Soda is a more involved process and includes a recovery system, not necessary in the manufacture of Sulphite Pulp.

AVERAGE COST OF PULP WOOD PER CORD

Spruce (Domestic)	$17.38	Hemlock (Domestic)	$11.79
Spruce (Imported)	$19.96	Hemlock (Imported)	$12.68

CONSUMPTION OF PULP WOOD IN THE U. S. (1926)

1916—$8.76 } For whole of U. S.
1926—14.96 }

	Spruce	Hemlock
Domestic	2,415,870 cords	1,064,661 cords
Imported	1,013,155 cords	10,701 cords

CONSUMPTION BY PROCESS (1926)

	Total	Mechanical	Sulphite	Soda	Sulphate
Spruce	2,415,870	1,074,462	1,293,664	.....	47,744
Hemlock	1,013,155	396,884	557,848	40,180	18,344

(In 1926 the United States consumed 10,100,000 tons of paper products.)

MARKET PRICES OF UNBLEACHED SULPHITE PULP (per ton)

1913	$44.60	1920	$131.60
1914	43.20	1921	70.00
1915	42.40	1922	51.20
1916	76.20	1923	59.40
1917	96.20	1924	51.60
1918	76.80	1925	53.40
1919	70.40	1926	51.56

These prices include all grades, the largest per cent, however, being the low grade newsprint sulphite.

Data Secured from the Paper Associations

The average cost of production of Sulphite pulp at the mill in the Eastern part of the U. S. and Canada and in Europe is from $43.00 to $53.00 per ton. On the West Coast the cost is from $27.00 to $43.00 per ton, largely due to low cost of raw material and low operating costs. Freight to the East and Middle West is from $7.00 to $14.00 a ton.

The Pacific Coast States contain approximately 50 per cent of the standing timber of the U. S. and 25 per cent of the available pulp wood.

Saw mill waste has been used for years in Europe for the production of pulp and at some of the Eastern mills in the U. S., so that this process is not new.

Except in the Northwest no new pulp mills are being built and old ones in the East and Europe are being closed as supplies of wood become exhausted. The consumption of pulp continues to increase and will continue to do so as new uses for paper develop.

Domestic Sulphite Pulp is classed according to grade as follows:

1—Bleached
2—Prime Easy Bleaching
3—Prime News Sulphite

Of these there is an over-production of No. 3, the news grade. No. 2, Prime Easy Bleaching can be produced from Pacific Coast woods with a strength and quality that creates a strong demand from the high grade paper mills. This also applies to No. 1, the Bleached.

Production in the paper industry since 1923 has been on a basis of from 79 per cent to 84 per cent of capacity and at a good profit. Can the lumber industry say as much?

The consumption of paper products has increased per capita from 20 lbs. per year in 1880 to 150 lbs. in 1926.

The cost of pulp production is divided about 50 per cent and 50 per cent between the cost of wood, and the manufacturing or conversion cost.

Bids and Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 7, 1927.—The Government Printing Office has received the following bids for 3,000 pounds of 22x28 gray photo mount board: Whitaker Paper Company, at $6.80 per C sheets; Dobler & Mudge, $7.99; Charles G. Stott & Company, $6.60 and $6.88; Reese & Reese, $8.98; R. P. Andrews Paper Company, $6.70 and $6.45; Stanford Paper Company, $6.29 and $6.64; Mathers-Lamm Paper Company, $8.35; and Walker Goulard Plehn Company, Inc., $7.40 and $9.00.

For 3,000 10½x12¾ high finish sulphite manila envelopes: Wolf Detroit Envelope Company, at $20.56 per M; United States Envelope Company, $14.80; R. P. Andrews Paper Company, $32.50; and Mathers-Lamm Paper Company, $21.95.

The Printing Office will receive bids on September 9 for 1110 pounds (2500 sheets) of 40x60—444 rope manila paper.

Announcement has just been made by the Government Printing Office of a number of paper awards as follows:

The Port Huron Sulphite Paper Company will furnish 40,000 pounds of high finish sulphite manila tag board in 18 inch rolls at 6.71 cents per pound. Dobler & Mudge will furnish 10,000 pounds of white sulphite writing paper in 17 inch rolls at 6.5 cents per pound. Bids for these items were received on August 8.

The P. H. Glatfelter Company will furnish 40,000 pounds of 38x48—269 white half tone book paper at 6.14 cents per pound, bids for which were received on August 1.

The R. P. Andrews Paper Company will furnish 7,100 pounds of 26x34—95½ white bond paper at 32.5 cents per pound and Dobler & Mudge will furnish 3,500 pounds of 22x38 gray photo mount board at $6.90 per 100 sheets. Bids for both of these items were received on July 29.

Barton, Duer & Koch Company will furnish 10,500 pounds of 12x18 wood manila tag board at 4.75 cents per pound, bids for which were received on July 21.

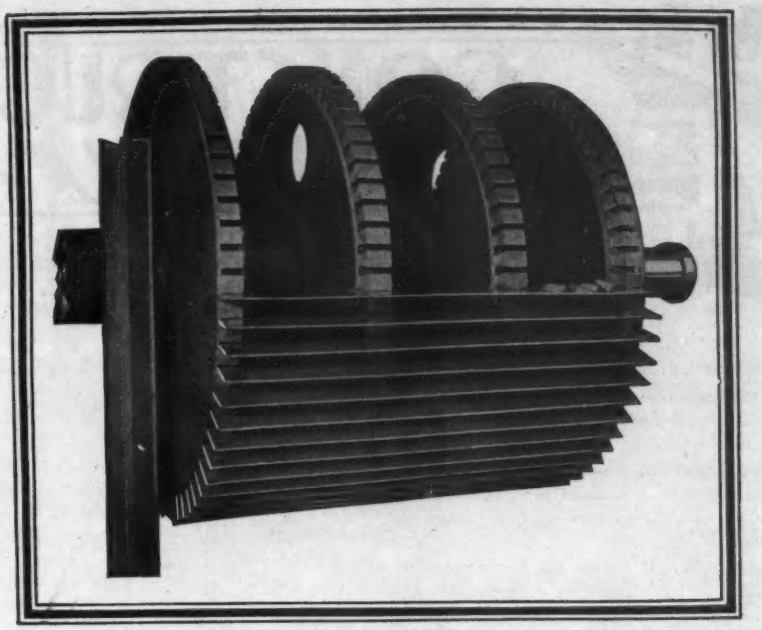
Dobler & Mudge will furnish 105,000 pounds of No. 2 quality, various size binders board at 3.095 cents per pound, bids for which were received on July 6.

Barton, Duer & Koch will furnish 1,300 pounds of 21½x32½—56 100 per cent white rag bond paper at 40 cents per pound, bids for which were received on June 29.

Lindemeyr & Harker will furnish 5,430 pounds of 22½x28½ 50 per cent white index paper at 20 cents per pound, bids for which were received on June 24. The R. P. Andrews Paper Company will furnish 2,500 sheets of 20x26 heavy executive cover paper at $5.05 per 100 sheets, bids for which were received on June 22.

W. P. Hawley, Sr., Goes Abroad

PORTLAND, Ore., September 1, 1927.—W. P. Hawley, Sr., president of the Hawley Pulp and Paper Company, Oregon City, Ore., is leaving for a trip abroad. He is accompanied by his wife and their little granddaughter, Adele. They will sail on the S. S. Paris from New York. Their itinerary will include Great Britain, France, Germany, Italy, Switzerland, Spain, Morocco, Egypt and points elsewhere in the Orient. They will be gone on the tour three months, or until about the first of the year.



Upwards of 800 Dilts Bandless Rolls Are in Use Today

American Asphalt Roof Corporation
American Tar Products Company
Analomink Paper Company
Ancram Paper Mills
Arrowhead Mills Inc. (46)
Backus Brooks Co.
Ball Brothers Company
Barrett Companies
Beaver Board Companies (19)
Bloomer Brothers Company (9)
Bird & Son (17)
Bogalusa Paper Company (12)
Brownville Board Company
Carthage Paperboard Company
Phillip Carey Company (44)
Certainteed Corporation (40)
Champion Coated Paper Company (22)
J. G. Cherry Company
Chicago Coated Board Company
Cia Industria Papeis e Cartonagen
Consolidated Paper Company (71)
Container Corp. of America
Coshocton Strawboard Co.
Cropper & Company (11)
Defiance Paper Company
Dixon Board Mills (8)
Downington Paper Company
Draycott Mills, Inc. (10)
Dunn Sulphite Paper Company
Eddy Paper Company (16)
Federal Paperboard Company
Field & White Co.
Flintkote Company (10)
Fort Orange Paper Co.
Foster Box Board Co.
Fox Paper Co. (9)
Colin Gardner Paper Co. (9)
P. H. Glatfelter Co.
Robert Gair Co.
Grays Harbor Pulp Co.
Halltown Paper Board Co.
Hanna Paper Corp.
Hoboken Paper Mills
Indiana Board of Filler Co.
Lafayette Box Board Co.
John Lang Paper Co. (16)
La Salle Paper Co.
Lawless Bros. Paper Co.
Lewis, Slocum & Le Fevre

This Is An Incomplete List of Users.

Many More Now on Order

SPECIFICATIONS

HEAD

Four cast steel heads shrunk on and keyed to shaft.
Special alloy steel fly bars, heat treated. Bars held at four points by steel keys driven home.
No shims; perfect fits at all four points; no loose bars.
Bars easily and quickly removed without taking roll from bearings.
Fly bars always sharp edged; never burr over. Superior design and correct mechanical construction.
The simplest and strongest beater roll built. Your present rolls can be built over to this type.

Lockport Paper Co.
Logan-Long Co.
Mac Sim Bar Paper Co.
Marion Paper Co.
McEwan Bros. (9)
R. B. McEwan & Son
Mengel Box Co.
Miami Paper Co.
Mid West Box Co.
Minnesota & Ontario Paper Co.
Mobile Paper Mills
Monroe Paper Products Co. (9)
Morris Paper Mills
Moyer & Pratt
Mutual Box Board Co.
National Biscuit Co.
National Paper Products Co. (8)
B. F. Nelson Co.
Newark Box Board Co.
New Castle Paper Mills
North Star Strawboard Mills
Ohio Box Board Co. (11)
Ohio Paper Co.
Orenda Corp.
Oswego Falls Corp.
Paper Board Corporation (10)
Paraffine Cos. (13)
Pioneer Paper Co. (10)
Provincial Paper Mills, Ltd.
Rainier Pulp & Paper Co.
Raybestos Co.
Richardson Co. (9)
Sall Mountain Co.
San Rafael Paper Co.
Saranac Pulp & Paper Co.
Schmidt & Ault Paper Co.
Frank Smith Paper Co. (8)
Howard Smith Paper Co.
John Strange Paper Co.
Thames Paper Co.
Taggert Bros.
Union Mills Paper Mfg. Co.
Three Rivers Paper Co.
United States Gypsum Co. (
Upson Co.
Valve Bag Co.
Victoria Paper Co.
West Jersey Paper Mfg. Co.

"Your Paper is made in your Beaters"

Dilts

MACHINE WORKS, Inc. FULTON, N.Y.

EXPORT OFFICE ~15 PARK ROW~ NEW YORK CITY.

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Baltimore, Md.—The Chesapeake Paper Board Company, Key Highway and the Baltimore & Ohio Railroad, will take bids on general contract early in October for its proposed mill addition, including improvements in present plant. The new structure will be one-story, and is estimated to cost about $75,000, including equipment. Specifications for the latter are now in progress. William W. Kerner is secretary, in charge.

Chicago, Ill.—The Chicago Mill Paper Stock Company, 900 North Ogden avenue, is said to have plans in progress for the rebuilding of the portion of its plant recently destroyed by fire. The new structure is reported to cost more than $40,000, with equipment.

South Glen Falls, N. Y.—The International Paper Company, 100 East 42nd street, New York, is pushing alterations and improvements at its local mill, to be given over in the future to the production of special medicated tissue papers. Full equipment will be provided for this purpose. It is proposed to have the plant ready for service in October.

Manitowoc, Wis.—The Schmidtman Company, Seventh and Jay streets, wholesale paper, will soon take bids for the erection of a four-story and basement warehouse for storage and distributing service, to be 35x80 feet, reported to cost in excess of $45,000, with equipment. William J. Raeuber, Manitowoc, is architect.

San Francisco, Cal.—The Zellerbach Paper Company, 34 Battery street, has awarded a number of miscellaneous contracts for the completion of its new four-story warehouse and distributing plant at Pacific and Front streets, on which work is now in progress, covering sheet metal finishing to Morrison & Company, 74 Duboce avenue, plastering, etc. The structure will be reinforced-concrete, estimated to cost about $260,000. The general contractor is Barrett & Hilp, 918 Harrison street; Ellison & Russell, Pacific Building, are engineers.

Attleboro, Mass.—The American Reinforced Paper Company, County street, will soon ask bids on general contract for its proposed new plant on Starkey avenue, estimated to cost in excess of $50,000, with equipment. Charles T. Main, 201 Devonshire street, Boston, Mass., is architect and engineer, and bids will be called from the latter office.

Riverton, Conn.—The Setag Paper Mill is developing capacity output at its plant under a full time production schedule, six days a week. Some departments at the plant are running on a 24-hour basis, and will continue on such schedule for an indefinite period. Gus Bell, heretofore connected with the Ashuelot Paper Mills, Hinsdale, N. H., is now in charge of the paper machine division at the Riverton mill.

Philadelphia, Pa.—The Brown & Bailey Company, 410 Franklin street, manufacturer of paper boxes and containers, has taken out a permit for the erection of its proposed new plant at 417-25 North Eighth street, to be three-story and basement, 90x131 feet, to cost in excess of $100,000, with machinery. Arrangements for equipment installation will be made at an early date. Superstructure will soon be placed under way. The Ballinger Company, 105 South 12th street, is architect and engineer.

Middletown, Conn.—The former local plant of the Elam-Strong Paper Box Company has been taken over by the Kirby Manufacturing Company, manufacturer of chimes, etc., and will be remodeled and occupied for the last noted branch of production.

Philadelphia, Pa.—The Paper Manufacturers Company, Inc., Fifth and Willow streets, is said to be arranging an early call for bids for the erection of its proposed new mill addition at Fifth and Callowhill streets, where property recently was acquired. It is expected to cost more than $75,000, with equipment. Clarence Wunder, 1520 Locust street, is architect, in charge. F. A. O'Neill is president.

Woronoco, Mass.—The Strathmore Paper Company has work in progress on a one-story addition to its machine department, including improvements in the present structure. The capacity of the plant will be enlarged with alterations and additions to the paper-making machines. A traveling crane will be installed in the machine room, as well as other facilities.

Stevens Point, Wis.—The Whiting-Plover Paper Company has work in progress on its proposed new addition, designed largely for warehouse and distributing service, and proposes to have the structure ready for occupancy at an early date. It will be one-story, 50x130 feet. The C. R. Meyers & Sons Company, Oshkosh, Wis., has the general building contract.

Somerville, Mass.—The Ager Manufacturing Corporation Medford, Mass., manufacturer of paper boxes, cartons, etc., has work in progress on a new addition to its local plant on Clyde street, to be one-story, 150x300 feet, reported to cost approximately $160,000, with equipment. It will be equipped for large increase in capacity. The structure is expected to be ready for service at an early date. H. M. Ramsay, 184 Boylston street, Boston, Mass., is architect. The main plant of the company is at Whippany, N. J.

Springfield, Mass.—The Package Machinery Company has filed plans for the erection of a new one-story addition to its plant, to be used largely as an assembling department. New machinery will be installed, including an overhead traveling crane.

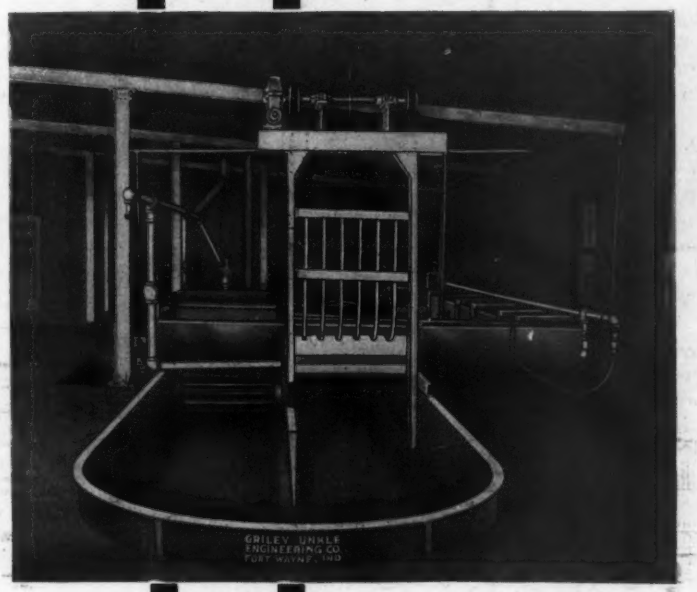
Quebec, Que.—Price Brothers, Inc., Montreal, and the Port Alfred Paper & Pulp Company, jointly, have concluded negotiations for the purchase of the plant and properties of the Quebec Pulp & Paper Company, for a reported consideration of $7,000,000. The new owners have plans under way for a reorganization of the acquired interests, and expansion plans are under consideration. Present mills of the Quebec company will be continued in service as heretofore.

New Companies, Etc.

New York, N. Y.—The Reasonable Paper Box Company, Inc., has been incorporated with a capital of $20,000, to manufacture paper boxes and containers, as well as strawboard boxes, etc. It is purposed to begin operations at an early date. The incorporators are Solomon Sheiness and Bernard Leitstein, 47 Greene street, New York. Samuel L. Wallerstein, 220 Broadway, New York, is representative.

Boston, Mass.—The Fellows Box Company has been incor-

Brr-Whee-Brr
Winter Time



It's Just Around the Corner

—and winter time brings frozen laps. But winter need not cut your production if a Griley-Unkle Beater is on the job. It will reduce your pulp to a satisfactory consistency without the aid of a shredder. It will enable you to pump stock directly to your secondary beater and keep operating at full capacity at a great saving in labor.

The Griley-Unkle Improved Extractor

will save you from $10,000 to $25,000 a year in labor alone and will give you stock of more even consistency. Over 70 of them are now in use in paper mills. We will gladly refer you to any mill whose manufacturing problems are similar to yours. They can tell you just what the Griley-Unkle does for them. Let one of our engineers aid you in your problems—there will be no obligation.

The Griley-Unkle Engineering Company

FORT WAYNE, INDIANA

porated with a capital of $250,000, to manufacture paper and cardboard boxes and containers, etc. Donald C. Hogan is president; and Doris C. Kaulbeck, 72 Tyler street, Wollaston, is treasurer and representative.

Philadelphia, Pa.—Officials of the Franklin Paper Company, 810 Sansom street, have filed notice of organization of the Hercules Leather Board Company, same address, to operate as a subsidiary concern.

Wilmington, Del.—Matthews Brothers, Inc., has been formed with a capital of 400 shares of stock, no par value, to take over and expand the local company, known as the Matthews Company, 105 West Ninth street, manufacturer of paper goods, operating a lithographing plant, etc.

Manchester, Conn.—The Rogers Paper Manufacturing Company, Inc., with local mill, has filed notice of reduction in capital stock from $100,000, to a nominal amount of $1,000. A new company of same name recently was formed to take over and expand the present interest.

Milwaukee, Wis.—The Spaulding Fibre Company, North Rochester, N. H., has taken out a license with the Wisconsin secretary of state, to operate in Wisconsin. C. E. Harkins, 520 East Water street, is representative.

Pawtucket, R. I.—The Wyer Lockt Bag and Envelope Company, 23 Winthrop avenue, has filed notice of organization to manufacture and deal in special paper containers of various kinds. Omar Benson, 23 Winthrop avenue, is head.

Brooklyn, N. Y.—The Roxy Paper Box and Carton Company, Inc., has been incorporated with capital of $20,000, to manufacture and deal in paper boxes and cartons. The incorporators are Benjamin Schnitman and R. Hirsch. The company is represented by Edelman & Paster, 313 Roebling street, Brooklyn.

Boston, Mass.—The M. & H. Paper Company has been incorporated with a nominal capital of $5,000 to deal in paper goods. William Mason is president, and Bernard H. Hurwitz, 56 Myrtle street, Malden, Mass., treasurer and representative.

Philadelphia, Pa.—Benjamin C. Betner Company, care of the Corporation Guarantee and Trust Company, 1600 Delaware avenue, Wilmington, representative, incorporated under Delaware laws, capital $250,000, to manufacture paper bags and containers, etc.

Foreign Opportunities

Caros Saavedra, care of the Philadelphia Commercial Museum, 34th street near Spruce street, Philadelphia, Pa., a resident of Mexico, is now in this country desiring to get into contact with mills specializing in the production of waxed paper for representation in his locality. Also, plants manufacturing sand paper and other abrasive papers.

An inquiry, No. 26,962, has been recorded by the Bureau of Foreign and Domestic Commerce, Washington, D. C., from a concern at Panama City, Panama, desiring to get into contact with American manufacturers of wrapping paper and bags. Information on application to office noted.

An inquiry, No. 47, 101, from an interest at Siquirres, Costa Rica, has been received by the Philadelphia Commercial Museum, 24th street, Philadelphia, Pa., expressing desire to get into contact with American manufacturers of paper bags and containers.

George & Sherrard Insure Employees

Executives of the George & Sherrard Paper Company, of Wellsburg, W. Va., have recently joined with their employees in acquiring a group life insurance policy. The policy was issued through the Prudential Insurance Company of America and it involves a total coverage of $98,000 for 91 employees.

The policy is of the contributory type with the employees sharing in the payment of the premiums. The amount of protection for each employee ranges from $1,000 to $2,000, according to the position held.

Candidates for Brotherhood Offices

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., September 5, 1927.—The fight for president of the International Brotherhood of Papermakers is wide open and the mails are beginning to carry an increasing amount of campaign literature to the various local unions in the United States and Canada. Both William R. Smith, present head of the organization and candidate for re-election, and Matthew J. Burns, his opponent, appear confident of election. One of the unions supporting Mr. Burns is the Troy local with a membership of around five hundred. This is one of the largest local unions affiliated with the Brotherhood.

It is recalled that when Mr. Smith was elected president one of the planks of his platform was for limitation of membership in the Brotherhood to skilled papermakers only. After election Mr. Smith took up his plan for reorganization of the union along these lines but the proposed step was so drastic that organized labor leaders appealed to Mr. Smith with the result that this reorganization program was never carried out. Limitation of union membership to skilled papermakers only would reduce the Brotherhood membership fifty per cent and many local unions, including the Troy local, would practically become non-existent. Most of the unions which would have been hit by President Smith's reorganization plan are backing Mr. Burns' candidacy for president.

The complete list of candidates for the different offices is as follows:

For President, William R. Smith and Matthew J. Burns.

First Vice President, Frank P. Barry. (Unopposed.)

Second Vice President, M. H. Parker, Skeneateles; Leslie Johnson, of Iroquois Falls; Thomas McGrath, of Escanaba.

Third Vice President, George J. Schneider, of Appleton, Wisc.; Thomas Smith, of Hudson Falls.

Fourth Vice President, Oscar Benoit, of Shawinigan Falls, Quebec; Arthur D'Aoust, Hull, Quebec.

Fifth Vice President, Joseph Addy, of Troy; Walter Baker, of Iroquois Falls.

Sixth Vice President, A. F. McLeod, of Espanola; Simeon Weir; George Baker, of Millinocket.

Secretary, Arthur Huggins, of Holyoke, Mass. (Unopposed.)

Treasurer, Archie Hook, of Chicago; John Couglin, of Brooklyn.

Auditor, David Larner, of Tonawanda. (Unopposed)

Delegates to the American Fedaration of Labor Convention, two to be chosen, Frank P. Barry, M. J. Burns, W. R. Smith.

Delegates to the Dominion Trades Congress, one to be chosen, Arthur D'Aoust, Leslie Johnson, A. F. McLeod.

Jeremiah P. Carey, former president of the Brotherhood, who was nominated for second vice president, is not placed on the ticket as officials of the Brotherhood have ruled that he is ineligible.

Creditors of Diana Paper Co. Get Dividend

[FROM OUR REGULAR CORRESPONDENT]

UTICA, N. Y., September 5, 1927.—Creditors of the Diana Paper Company petitioned into bankruptcy recently were notified this week that a dividend of ten per cent would be paid to all creditors whose claims are duly presented and allowed. A meeting of creditors for the purpose of paying this dividend was held Saturday morning in Watertown at the office of John Conboy, referee in bankruptcy. A bill for $1,000 was presented to the meeting for approval by Charles A. Phelps for services and disbursements as attorney for the trustee.

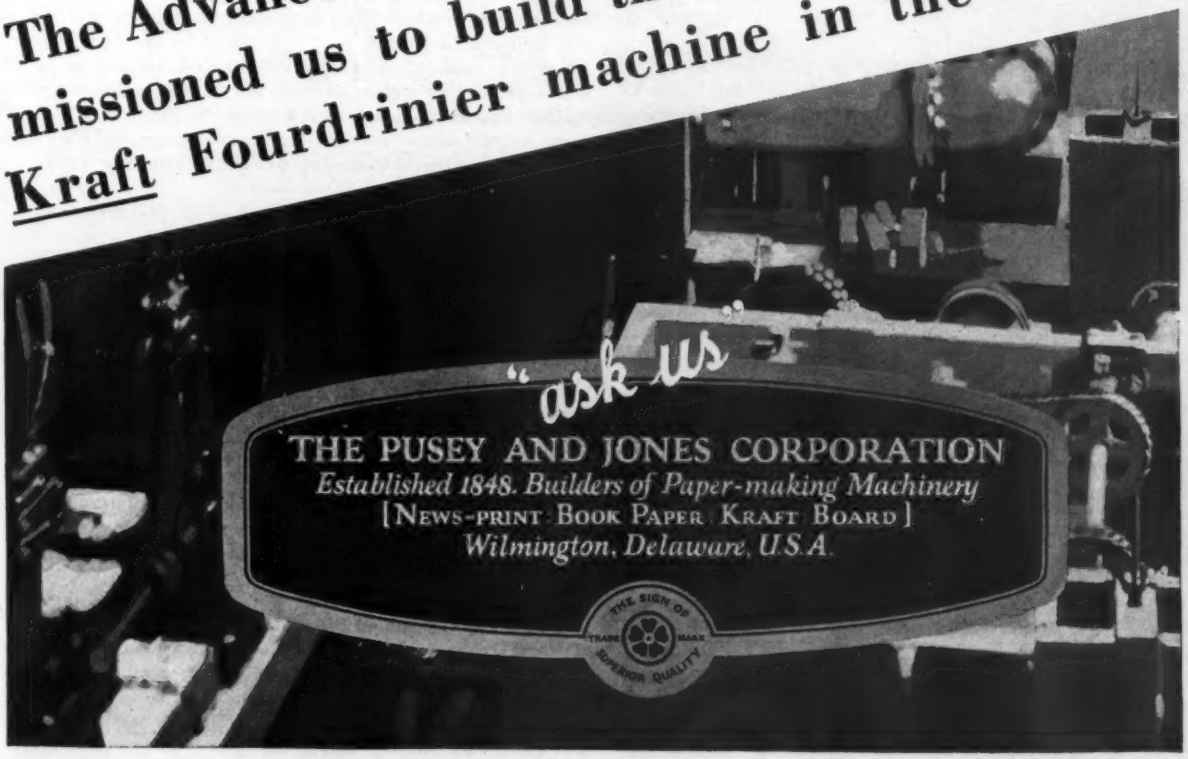
Lake Superior Mill Addition Started

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., September 3, 1927.—Finding that increased business made more room necessary, the Lake Superior Paper Company, Ashland, Wis., has started construction of a large addition to the finishing room of the mill. The company will install additional machinery in this new unit, and also will use part of the space for storage.

"242 inches wide!"

The Advance Bag & Paper Co. Inc., have commissioned us to build the widest and fastest Kraft Fourdrinier machine in the world.



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Established 1848. Builders of Paper-making Machinery

[NEWS-PRINT BOOK PAPER KRAFT BOARD]

Wilmington, Delaware, U.S.A.

THE SIGN OF TRADE MARK SUPERIOR QUALITY

New York Trade Jottings

Eric Bowater, of the Bowater Paper Company, London, England, has arrived in New York to confer with his associates here.

* * *

Elis Olsson, vice-president and general manager of the Chesapeake Corporation, West Point, Virginia, landed in New York on Tuesday, September 6, after several weeks' visit in Sweden.

* * *

G. Nearburgen, assistant to the president of the Newfoundland Power and Paper Company, Ltd., is a prominent visitor to the metropolis. He is making his headquarters at the Hotel Belmont, while in the city.

* * *

The Blaw-Knox Company, manufacturers of steel products, of Pittsburgh, Pa., announce that on and after October 1, the New York offices of the company will be located at the Canadian Pacific Building, 342 Madison avenue.

* * *

A delegation of English China Clay producers arrived on this side recently aboard the Cunard liner *Berengaria*. They are visiting the important interests here with reference to existing trade conditions and in order to ascertain more accurately the requirements of the China Clay consumers.

* * *

The fourth Educational Graphic Arts Exposition under the auspices of six organizations within the printing industry was opened on Labor Day, at 2:30 o'clock in the Grand Central Palace, New York. It will continue until September 17 and will be open daily except Sunday from 1 to 11 P. M.

* * *

Hugh P. Baker, secretary of the American Paper and Pulp Association, has just been invited to give an address on the paper industry at the annual meeting of the Robert Morris Association, the national association of bank credit men, to be held at Wernersville, Pa., October 3 and 4.

* * *

The Committee on Stock List of the New York Stock Exchange has admitted to the list temporary certificates for 50,000 shares of no par common stock of the International Combustion Engineering Corporation. Otis & Co. have underwritten the preferred shares, which will be offered to stockholders of record of September 9 at $100 a share.

* * *

The United Paperboard Company, Inc., New York, reports for the year ended on May 28, a net income of $88,185 after taxes, depreciation and other charges, against $292,528 in the previous year. This is equivalent after preferred dividends to 7 cents a share on 120,000 shares of common stock, against $1.78 a share in the previous year.

* * *

Paul S. Hanway, statistician of the American Paper and Pulp Association, spent the week of August 29 calling on mills in the Fox River Valley of Wisconsin and in Kalamazoo. En route Mr. Hanway spent a day at Northwestern University, at Evanston, Illinois, where he gave two talks on the subject of trade association statistics at the National School for Commercial and Trade Association Executives.

* * *

The International Paper Company, New York, has called for redemption on October 1, 1927, at 102½ and interest, $10,000,000 of the company's 6 per cent convertible debentures, due October 1, 1941. In announcing the redemption, attention is called to the fact that the right of conversion into cumulative 7 per cent preferred stock at the rate of $100 debentures for each $100 par value of stock expires on October 1, 1927. Effective as of the same date the right to purchase common stock of the company on the basis specified in the trust indenture or on the more favorable basis proposed by the company in connection with its recent issue of additional common stock will expire.

* * *

D. A. Crocker, secretary of the Woodlands Section of the American Paper and Pulp Association and also secretary of the Salesmen's Association of the Pulp and Paper Industry, is just back in New York after several weeks' vacation. During his vacation Mr. Crocker attended meeting of the Woodlands Section of the Canadian Pulp and Paper Association, following which he visited forest holdings of several Canadian pulp and paper companies.

$5,000,000 Mill for Tacoma

[FROM OUR REGULAR CORRESPONDENT]

TACOMA, Wash., September 1, 1927.—A big pulp mill operation, said to exceed the sum of $5,000,000 has been announced by good authority to be started in the near future in this city.

The announcement was made by M. G. Tennant, mayor of Tacoma, who stated that his authorization was C. M. McMillen, of New York, vice-president of the Union Bag and Paper Corporation, together with Major Everett G. Griggs, president of the St. Paul and Tacoma Lumber Company.

The project has been under consideration for some months, but nothing of a concrete nature had up to yesterday been made public. The St. Paul and Tacoma Lumber Company of Tacoma, in connection with whom the Union Bag and Paper Corporation is planning to operate, has one of the largest saw mills on the Pacific Coast. They have lately been planning to add a large hemlock mill operation to their present mills and along with this manufacture pulp from hemlock and hemlock mill waste.

The capacity of this pulp mill is said to be 100 tons per day. While no plans have as yet been published, the pulp mill will be most modern in every respect; chemical sulphate is thought likely to be the process used and the product either kraft or bag and wrapping or both. The St. Paul and Tacoma Company has quite extensive holdings on the tide flats, adjacent to their present mammoth mills, where likely both the new hemlock mill and the pulp mill will be located.

This company, whose timber holdings consist largely of fine stands of hemlock will in all probability, bring to Tacoma a new combination, the manufacture of hemlock flooring, which is rapidly becoming the popular material for floors and the manufacture of sulphate pulp, if not the paper itself in the very near future.

Unsatisfactory Pulp Prices in Norway

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 7, 1927.—A recent cable from Commercial Attache Sorenson at Copenhagen states that the Norwegian situation is still marked by depression although some improvement has been noted due largely to compulsory wage adjustments and the new tariff. The pulp industry complains of highly unsatisfactory prices which have shown no improvement owing to the curtailed production established in cooperation with the Swedish mills. Paper producers are active and report a good demand. Norwegian exports of news print in July amounted to 14,000 metric tons, mechanical pulp 36,900 tons, chemical cellulose, 18,000 tons and other paper 10,500 tons.

Pulp Exports From Finland Increase

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 7, 1927—Late official reports from Finland indicate increased improvement in practically all lines with a continued decrease in unemployment. Exports of pulp for the first six months of this year were 205,000 metric tons, an increase of 29,000 tons over the same period of last year. While paper exports reached a total of 107,700 tons, about 7,000 tons more than similar exports during the equivalent period of 1926. Exports of board, however, decreased over 3,000 tons during the first half of this year.

STRENGTH and SECURITY

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For Quality Papers Use

A-1 BLEACHED SULPHITE PULP

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Mills at Edsvalla, Sweden

VESTFOS EASY BLEACHING SULPHITE

Mills at Vestfossen, Norway

KRONSTÄDTER STRONG UNBLEACHED AND EASY BLEACHING SULPHITE

Mills at Turciansky Sv. Martin, Czecho-Slovakia

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Mills at Sprangsviken, Sweden

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Vol. LXXXV New York, September 8, 1927 No. 10

FOREIGN TRADE IN PAPER

There was a slight decrease in the value of paper and manufactures exported in July compared with the same month of last year while the imports were greater according to the Paper Division, of the Department of Commerce.

In July of this year paper exports were valued at $2,200,364 compared with $2,267,598 in July of last year while imports of paper in July of this year totaled $12,071,968 compared with $11,556,097 in July of last year.

According to the Department's figures also during the seven months ending July this year exports were valued at $16,067,345 compared with $15,715,751 for the same period of last year. Also for the seven months ending July, this year, imports were valued at $83,674,941 compared with $78,703,232 for the same period of last year.

Of the exports the value of news print exported during July was $92,691 compared with $181,516 in July of last year. The value of uncoated book paper exported in July was $139,629 compared with $123,817 exported in the same month of last year. Also the value of paper base stocks exported during July was $331,517 compared with $376,313 for July of last year.

During July of this year also the United States imported $10,525,007 worth of standard news print paper as compared with $10,294,774 imported during July of last year. Paper base stocks imported in July of this year was valued at $9,945,498 compared with $11,344,170 imported during the same month of 1926. Of this $5,165,711 worth of sulphite wood pulp were imported during July of this year as compared with $5,058,483 imported during July of last year.

THE CHEMICAL EXPOSITION

The history of the United States is replete with occurrences where in cases of emergency industry has stood in the foreground, carrying the burden and supporting the country in the hour of need. The particular outstanding instances are the dye and the nitrate industries, just prior to the declaration of war by the United States on Germany and her Allies where a condition existed that created a very serious problem in the supplying of the necessary chemicals for use both by the Government and industry in this country. Such conditions could not have been met and surmounted if it were not that chemistry and chemical engineers had always been just a step ahead in the methods and advanced processes of chemistry in this country.

Prior to the World War, the chemical industry was more or less in a stagnant state. Most of the principles developed in chemistry had come from foreign sources and industry depended almost entirely on this field for the necessary materials and finished products that were required. With the declaration of war in Europe and the increased demand for raw and finished products the industries in the United States were suddenly confronted by the importance of chemistry and chemical engineering products necessary for their existence. Branches of this industry sprung up over night and before the end of the war the scope of the chemical industries in the development and manufacture of crude, raw, and finished products, or satisfactory substitutes, could be produced in this country by domestic industry thereby conclusively proving the part played by chemists and chemical engineers has never been so prominent as it is today. It is impossible to name any form of industry or life in the civilized world that has not been affected and benefited by this science, and the developments that have been brought about through research and tireless effort on the part of the far-sighted leaders of this industry has proved beyond any argument the fact that this industry when aroused can produce either raw or finished materials or satisfactory substitutes in emergency.

Of further interest is the program as outlined for the students' course that is annually conducted in connection with the Exposition of Chemical Industries. Leading educational institutions are sending both students and members of their faculty to attend the Exposition both for the lectures during the students' course and the Exposition where a careful study of exhibits and practices will be discussed and in many cases, demonstrated.

One of the many interesting features of the Exposition will be exhibits of Stainless Steel and Iron in the alloy section. These exhibits will contain the latest developments in this branch of the alloys and the leaders will be the Central Alloy Steel Company, Vanadium Corporation of America, and the International Nickel Company. The appearance of fabricated stainless materials dates back only as far as 1912. The Krupps exhibited at the Gothenberg Exposition that year certain stainless articles of commerce manufactured from their highly alloyed nickel chrome steels. It has been only very recently that stainless steel has come to be far more prominent than in any other period in its history. However, constant research is rapidly overcoming the various obstacles in this field and the industrial importance of this alloy is evidenced by the long list of patents in this country of the smaller malleable varieties rather than the steels. Industrial importance in rust resisting sheets cannot be too strongly stressed because of the protection afforded by such alloys. This is particularly effective in food containers, chemical reaction towers, milk coolers, and acid drums. Much interest is already being manifested in the alloy section. Along with the new alloy exhibits, The Brown Instrument Company is exhibiting a new electric flow meter with an unusual basic principle and other special features of great practical importance to all industry where instruments of precision and measurement are used. The Brown Instrument Company reports that for the first time with a flow meter oper-

ating on the self balancing inductance bridge principle they are able to accurately indicate and record flow changes at any distance between the manometer and connected instruments, without step resistances, make and break contacts, permanent magnets, voltage regulators, compensators, electrical parts in the pressure chamber of stuffing boxes. A full line of Brown Instruments of Measurement and Precision will be exhibited at the coming Exposition of Chemical Industries. The management reports that the Exposition will reach a point as nearly perfection as possible and with the long list of exhibitors of domestic products this year for the first time in the history of the Exposition, there will be a number of foreign exhibits of great interest to all industry. The United States Government will have two very interesting exhibits. The National Safety Council will present in complete form the recently concluded exhaustive study of Benzol and the toxicity of this solvent where used in products designed for manufacturing and domestic use. This is only one of the features of the 350 exhibits that will be displayed at the Grand Central Palace, September 26 to October 1, 1927 during the Eleventh Exposition of Chemical Industries.

Among other features of the Exposition that will be of special interest to pulp and paper men will be the special meeting of the Technical Association of the Pulp and Paper Industry to be held at 2 o'clock Wednesday afternoon, September 28, in the Special Conference room at the Exposition. The program will consist of a series of ten minute addresses and will be under the chairmanship of Mr. Elmer C. Tucker, president of the Technical Association. The program, which was printed in full in the Technical Section of last week's issue of the PAPER TRADE JOURNAL, is on subjects of timely interest to all members of the industry.

To Make Medicated Tissue at Glens Falls

GLENS FALLS, N. Y., September 5, 1927.—The International Paper Company is preparing to start production on a new product at the South Glens Falls mill, according to announcement made this week. The new product will be medicated tissue for use of hospitals and the drug trade. The tissue resembles somewhat the gauze now in use but will be much more economical and will be just as absorbent.

The necessary machine changes are now being made at South Glens Falls in preparation for the beginning of production on the new tissue which it is expected will get under way within the next month. The local mill for some time past has been making artificial cotton and turning out a product that is being used in the manufacture of paper towels, napkins, etc. The new activity will mean the employment of additional women and girls when operations get under way in the new department.

G. A. Hall Returns To Sweden

Gösta A. Hall, who has been chemical engineer at Albemarle Paper Manufacturing Company, Richmond, Va., is returning to Stockholm after having spent the past three years in this country.

Mr. Hall was formerly with the Royal Swedish Testing Institute conducting a special investigation on the factors affecting the durability of paper. He came to United States under a scholarship of the Institute in May, 1925, and continued his studies at the Bureau of Standards and Forests Products Laboratory, Madison, Wis., after which he had a position in American Writing Paper Company, technical department.

During his stay in this country Mr. Hall has made many friends who will be interested in keeping in touch with him.

Forest Depletion

Annapolis Royal, N. S., September 6, 1927.

Editor PAPER TRADE JOURNAL:—

To prove that I have been only too conservative in my warnings to the Government at Ottawa, regarding the importance of conserving our wood supply for the Canadian mills, it is only necessary to refer to the fact that an inventory of the forest resources of British Columbia has recently been completed which reveals that, outside of five or six of the large private holdings, the fir timber will be exhausted within five years. It shows only three and a half billion feet of available spruce, which is less than one year's supply for all Canada, and twenty years' supply of hemlock and cedar, that is, of course, provided it is not destroyed by fire sooner, and, as British Columbia lost one million seven hundred and fifty thousand acres by fire last year alone, this is something that will quite likely happen.

This being the situation in what has been called Canada's last great timber reserve, you can readily understand what the situation must be in the older settled portion of the country, which has been burned and exploited for more than a century. This together with the disappointment recently experienced in the Manitoba forest surveys, which shows that only a small per cent of the forest area is now wooded, and some others that I might name, all go to prove that my statements in regard to our wood supply have, as I said before, been only too conservative.

Our annual exports of raw pulpwood have increased to 1,700,000 cords, the cut for our own mills with the completion of all the new paper machines now under construction will amount to more than 5,000,000 cords, making the cut for pulpwood alone 6,700,000 cords, to which must be added the amount cut for lumber, railway ties, telegraph and telephone poles, laths, shingles, fence posts and all other purposes which amount to over 15,000,000 cords, or a total cut of 21,700,000 cords annually and these figures are all taken from *Government statistics*. Now, if we only allow that four and one-half cords are destroyed by insects, fungi and fire for each cord utilized, also according to *Government statistics* and which our past history proves is over-conservative—and then take the *Government figures* for the amount of our remaining stand and divide that figure by the amount of this annual depletion, you will then be in a position to judge whether I am right or wrong in making the statement that we have in Canada less than ten years' wood supply remaining.

When this situation becomes generally known and its significance is fully realized and all these new paper machines come into operation and are clamoring for wood, we are due to see the biggest advance in pulpwood values that this continent has ever experienced.

The mere fact that American interests are now anxious to transport pulpwood from so great a distance as from Newfoundland to their mills in the United States and Canada ought to be sufficient in itself to convince the most skeptical of the seriousness of the impending wood shortage and should be ample warning to anyone.

FRANK J. D. BARNJUM.

A New Bradford for the Paper Industry

Twenty-eight years ago in December 1899 the PAPER TRADE JOURNAL printed the following item:—

"It is reported that W. J. Bradford, of the W. J. Bradford Paper Company, Chicago, is the proud father of the finest boy who was ever born in this vicinity. Mr. Bradford expects in the course of time to initiate the young man into the mysteries of the paper business. Congratulations not already received are now in order."

W. J. Bradford Jr., has requested the PAPER TRADE JOURNAL to reprint this item now to welcome the third generation of Bradfords to the paper trade.

Try It On Your HARDEST DRIVES!

You have at least one in your plant—a drive that keeps your millwrights busy and wastes money! Try Goodrich "1788 Highflex"—and watch the trouble disappear!

Three years ago, a large New England manufacturer standardized on "1788 Highflex". He has recently checked up his belting cost for the last ten years. Up to the time of installing "1788 Highflex", average yearly cost was $11,000. Since the plant was put on a 100 per cent "1788 Highflex" basis, annual cost has been well under $7,000.

This, remember, is only the saving in actual cost of belting—but low maintenance expense, and the increased production due to fewer shut-downs, represent an even greater saving!

That is why we say—"Try '1788 Highflex' on your hardest drives!"

Free bending of ply on ply.
No folds in the fabric.
No seams to open up.
No ply separation.
No bootlegging.
Made of strongest belt duck—50% less stretch.
Compact weave of fabric gives better anchorage—fasteners won't pull out.
Not affected by atmospheric changes.
Longer life.
Send for folder of valuable horse-power and pulley data.

THE B. F. GOODRICH RUBBER COMPANY
Established 1870 Akron, Ohio

Goodrich

"1788 Highflex" Belt

Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G. MacNAUGHTON, Secretary

Stream Pollution in Wisconsin*

Special Report Prepared by Bureau of Sanitary Engineering, Wisconsin State Board of Health, Madison, Wisconsin

This report covering a comprehensive study ot the chief streams in Wisconsin as to the degree of pollution, will be studied with interest since the chief industry affected is that of paper and pulp.

The lower Fox River, from Lake Winnebago to Green Bay is 38 miles in length. Into it is discharged the sewage from six cities with a total population of 87,689 and industrial waste, principally pulp and paper mills with an estimated population equivalent to 744,500 the industrial waste having been translated into terms of population.

Wisconsin River, from Lac Vieux Desert to Prairie du Chien is 430 miles in length but the section considered in the survey is about 175 miles from Rhinelander to Petenwell Rock. In this section are included all the paper mills on the river and while the domestic sewage discharge into it represents a population of 64,504 the industrial wastes chiefly of pulp and paper mills, have an estimated population equivalent of 913,400.

In abstracting the report excepts of more direct bearing on the stream pollution problem affecting the paper industry are given—

Summary of Basic Principles

The general or basic data may be briefly summarized as follows:

(1) The discharge of industrial waste into certain streams is the only practical method of ultimate disposal in many cases, and constitutes a necessary and proper use of the stream, provided the dilution is so great that there is no menace to public health nor material interference with the natural aquatic life of the stream.

(2) Factors affecting fish include:

(a) Reduction of the dissolved oxygen in the water of a stream to less than 2 parts per million for a material length of time results in death or migration of practically all fish.

(b) Some wastes, such as gas-plant wastes, mine drainage, and certain chemical wastes are toxic or poisonous to fish.

(c) Plant growth is necessary for fish life, and fish may seek other habitat due to changes in the plant or aquatic life of a stream.

(d) Pollution is more deleterious to young fish, particularly just after absorption of the food sac, than to adult fish.

(e) The discharge of large quantities of suspended matters forms sludge beds in the stream and interferes with spawning and the spawn.

(3) Nearly all wastes, either through chemical or biological reaction, cause reduction of the dissolved oxygen of the stream, industrial wastes generally having a greater oxygen demand than domestic sewage.

(4) During warm weather biological oxidation is more rapid than in cold, so that the oxygen demand of the waste is greater although the actual amount of oxygen available is less because warm water retains less oxygen in solution. Furthermore, the tolerence of fish is less in warm than in cold water and their oxygen requirements are greater.

(5) When the dissolved oxygen of a stream is depicted green plants and other classes of aerobic life die and anaerobic organisms, such as worms and lower animal life, prevail.

(6) A stream tends to purify itself by natural processes and will ultimately return practically to normal if the concentration of the wastes is not too great and sufficient time elapses before there is additional pollution.

(7) Based upon the tourist trade the value of good fishing to Wisconsin is estimated at about $10,000,000 annually.

Improvements in Waste Treatment

Although a large portion of the work during 1926 has been general in nature, such as making stream surveys and studying methods of waste treatment, certain definite improvements have been made to reduce objectionable pollution. A careful survey of the situation in the paper industry indicates that $570,589 has been spent in improved equipment to prevent objectionable wastes from discharging into the stream, and approximately $22,900 in research work to develop recovery processes or more satisfactory methods of waste treatment. These improvements include saveall equipment and reuse of "white water" to reduce fibrous wastes, and ponding, aeration and recovery processes to reduce pollution by chemical wastes.

In addition to the above the personnel furnished to sample and analyze water from certain streams involved an expenditure of at least $5,000. Improvements already planned for next year involve expenditures totaling $69,314. Other industries have spent a total of about $10,000 in the installation of waste treatment plants. In other words, there has been spent a total of $608,489 by the industries of Wisconsin for equipment or research to recover or treat wastes causing objectionable stream pollution.

TAPPI SECTION, PAGE 93

* A Joint Report of the Conservation Commission and State Board of Health of Wisconsin concerning activities in the control of stream pollution, from July 1, 1925, to December 31, 1926. (Abstracted.) Bureau of Sanitary Engineering, Wisconsin State Board of Health—C. M. Baker, State Sanitary Engineer; L. F. Warrick, Assistant Sanitary Engineer; E. J. Tully, Chemical Engineer; O. J. Muegge, Assistant Sanitary Engineer; J. P. Smith, Assistant Sanitary Engineer (temporary); C. L. Turner, Biologist (temporary).

Treatment of Pulp and Paper Mill Wastes

That some pulp and paper mill wastes, particularly sulphite waste liquor, are sources of serious stream pollution has been definitely established by previous investigations of sanitary engineers, chemists and biologists, both in this country and in Europe. These studies have shown that such wastes are detrimental to fish and other aquatic life, due principally to their high oxygen demand, but also to their fiber content. The need of adequate recovery or treatment processes for these wastes in the control of stream pollution is therefore apparent. The recent development of efficient saveall systems, having made possible the reduction of fibrous wastes to a minimum, research now is being directed toward both the utilization and treatment of objectionable chemical wastes from this industry. It is the object of this report to describe several experiments conducted in Wisconsin during the summer of 1926 in the treatment of the strongest of these wastes, sulphite waste liquor.

The non-cellulose substances and spent chemicals, in the cooking liquor at the end of the digestion period, are drained and washed out of the pulp. There is in solution in this waste liquor over 50 per cent of the dry weight of the wood, including chemical compounds classified as sugar, alcohol, aldehyde, cymene, acetic and formic acids, and furfural. In addition the spent cooking liquor contains a small amount of free and loosely combined sulphur dioxide, even though a large part of the former is retained in the acid recovery system. These materials together with the pulp wash water constitute the sulphite waste liquor.

Past Investigations

The fact that for every ton of sulphite pulp produced, from 1 to 1.2 tons of wood constituents are wasted into streams, lakes and other such places of easy disposal, has not been unrecognized by chemists and engineers here and abroad. Large sums of money have been spent in research and experiments to develop recovery systems to obtain valuable by-products, from the sulphite waste liquor. It has been demonstrated that such by-products as sulphite alcohol, glue, core binder, road binder, briquetting material for coal dust, tanning extracts and many other similar articles of commerce can be obtained from waste liquor but a few mills can supply the entire present demand for some of these commodities. Recovery processes for other commodities fail in competition with industries using different sources of raw material and methods of production. Also the manufacturing processes involved, in some instances, as in the preparation of sulphite alcohol, do not offer a solution to the stream pollution problem, since the wastes produced in distillation are almost as objectionable as the sulphite waste liquor.

Utilization of the fuel value of this waste, which amounts to approximately 8000 B.t.u. per pound of the recovered concentrate, seems most promising for economically reducing stream pollution. Here again, however, recent experiments have shown that more efficient methods are needed for draining and washing the pulp and for the subsequent evaporation of the waste liquor to a consistency satisfactory for combustion under the power plant boilers.

In brief, utilization of sulphite waste liquor on an economical basis involves two major problems, one of a chemical engineering nature, in the development of more efficient recovery systems, and the other of a commercial nature, in sales promotion to find new markets for commodities produced. Both are inter-related and demand the complete cooperation of industry for their successful solution.

Until these problems can be overcome, it will be necessary to develop and apply methods of treating the sulphite waste liquor to reduce its objectionable characteristics in the control of stream pollution. Relatively little attention has been given to the matter of providing such treatment processes for this waste until of late, in connection with the widespread effort being directed toward keeping streams in a reasonably clean condition. The following report gives in detail some experiments in the treatment of sulphite waste liquor conducted by the Bureau of Sanitary Engineering in cooperation with the Wisconsin Pulp and Paper Industry.

Sulphite Waste Liquor Aeration Experiments

Stream surveys and chemical analyses of wastes from pulp and paper mills definitely show that sulphite waste liquor exerts a considerable oxygen demand when discharged into a stream. The rapidity with which waste sulphite liquor removes oxygen from a stream, as indicated by the results of the stream survey at Park Falls, suggested the possibility of reducing this oxygen demand by aeration. A preliminary investigation with samples of sulphite waste liquor sent to the State Laboratory of Hygiene, indicated that its oxygen demand could be reduced approximately 50 per cent by forcing air into it through the pores of a basswood block. This experiment seemed to confirm the opinion that a large part of the initial demand is direct chemical oxidation of the unstable constituents.

This initial oxygen demand is followed by one of more gradual deoxygenation and probably two consecutive stages over an undetermined period. The immediate oxygen demand of the waste is undoubtedly due to oxidation of the free and loosely combined sulphur dioxide in the spent sulphite liquor. The oxygen requirement following the initial demand is quite probably due first, to the stabilization under aerobic conditions of the carbonaceous organic matter in the waste, and, secondly, the oxidation of the relatively small amount of nitrogenous matter. It is yet to be ascertained whether the changes take place in distinct and strictly consecutive stages, in accordance with the view emphasized by Adeney and other British investigators in the case of sewage.

Previous investigations conducted in Europe with the wastes from sulphite pulp mills, definitely proved that stream conditions could be materially improved by equalizing the discharge of the sulphite waste liquor. The results of these investigations were presented in a very interesting paper by Professor P. Klason entitled "Purification of Wastes Discharged from Sulphite Pulp Mills," delivered in a lecture at the First Meeting of Swedish Chemists in Stockholm, May 29-30, 1908.

Experiments at Park Falls

Investigations regarding the effect of ponding and aeration on sulphite waste liquor were started during the summer of 1926 and continued throughout the fall at Park Falls. With no sources of pollution above the mill and only a relatively small amount of domestic sewage from the municipality discharged a short distance below, conditions are almost ideal for obtaining an accurate estimate of improvements effected in stream conditions by any method of waste treatment applied. In addition the stream flow can be regulated by means of the power dams located along the Flambeau River in that vicinity.

A sulphite waste liquor storage reservoir was formed by constructing a dam across the original channel of the Flambeau River, which had been abandoned following the construction of the power dam at Park Falls. A wooden pipe line was built to conduct the wastes from the sulphite mill to this reservoir. The dam is 4 feet high in the center and approximately 100 feet long, creating a pond with a surface area of 21,600 square feet. The down stream face of the dam consists of several wooden steps over which the cooled and settled sulphite waste liquor cascades as it is discharged into the river. In order to regulate the flow and to allow the sulphite waste liquor to come in contact with the air in a sufficiently thin film for effective aeration in passing over the cascade, a section of the crest of the dam 40 feet in length was made adjustable. This section of the dam is virtually a very wide sluice gate. The rate of waste discharge can be controlled readily by raising or lowering the sluice boards, increasing or decreasing respectively the opening between the bottom of the boards and the dam. When adjusted the flow remains practically constant, since fluctuations in flow of wastes from the sulphite mill are not sufficient to raise or lower the head over

the opening to any great extent. Constancy of head is due to the large area to be flooded and the location of the waste inlet pipe so as to discharge away from the dam. With the average daily discharge of 73,000 gallons of concentrated sulphite waste liquor and 128,500 gallons of wash water, the settling period provided by the storage reservoir is slightly over two days. This provides ample time for the waste to settle and cool. In addition the liquor is in contact with the atmosphere and will have an opportunity to take up oxygen to supply the immediate oxygen demand.

Results of Treatment:

The results indicate that the oxygen demand of the sulphite waste liquor for periods from 12 hours to five days can be reduced from 76 to 92 per cent by ponding and aeration.

From the results, it may be inferred that the cooling and settling of the wastes in the storage reservoir is of much greater effectiveness in the reduction of the oxygen demand than aeration over the cascade spillway of the reservoir dam. It is believed that the initial oxygen demand, or that responsible for the immediate depletion of oxygen in a stream just below a sulphite mill, is materially, if not completely, satisfied during the two to three days settling period. The somewhat slower oxidation in the second stage of stabilization previously referred to seems but slightly accelerated by cascading over the reservoir dam. Data of interest in this connection should be obtained, however, during contemplated further experiments in blowing air through the wastes as they are discharged over the dam of the sulphite liquor storage reservoir.

Conclusions and Recommendations:

From the foregoing studies in the treatment of sulphite waste liquor from pulp and paper mills to reduce its oxygen demand in the control of stream pollution, the following conclusions are made:

1. Ponding and aeration of the waste will effect a very material reduction in its oxygen demand, preliminary tests indicating 76 to 92 per cent reductions in one-half to five day demands. These reductions are believed to be higher than will be obtained with continued treatment.
2. Mechanical aeration such as provided by the Bassley-spray device, will also reduce the oxygen demand of sulphite waste liquor, tests indicating from 34 to 60 per cent for one to five day demands.
3. The initial oxygen demand is probably due in a large part, if not entirely, to direct, rather than biological oxidation of the most unstable constituents of the wastes, such as free and loosely combined sulphur dioxide.
4. Ponding, particularly where large storage capacity is possible, avoids intense periodic stream pollution by the waste, and provides an opportunity for partial satisfaction of the oxygen demand. Where sufficient land is readily available, the cost is nominal.
5. The ultimate solution of the sulphite waste liquor problem lies in utilization as a fuel or in the manufacture of valuable by-products rather than in treatment.

These first three conclusions, being based on limited observations and data, should be regarded as preliminary and serve principally as a guide in conducting more exhaustive tests. To obtain further information regarding the effectiveness of aeration, and to reduce stream pollution by this waste:

1. Ponding of the sulphite waste liquor should be practiced where feasible, prior to discharge into streams.
2. Further cooperative waste treatment experiments should be made at Park Falls, with more complete analytical control to determine chemical changes effected by the treatment.
3. Cooperative research should be conducted by the pulp and paper Industry to develop better methods of washing sulphite pulp, thus preventing excessive dilution of the spent liquor from the digesters, as an initial step in providing recovery systems for economical utilization of the waste liquor.

Bibliography

In presenting this bibliography concerning sulphite waste liquor under the headings (1) Utilization and (2) Stream Pollution, no attempt is made to list all publications concerning this subject; it is the purpose, rather to give references to published abstracts, which review the literature up to the present time.

UTILIZATION

1. Utilization of Waste Sulphite Liquor, by Bjarne Johnsen and R. W. Hovey; Department of Interior, Canada, Forestry Branch; Bull. 66, 1919.

   A complete review of the literature up to 1919.
2. Ubersicht über die neure in-und ausländische patent literatur, betreffend die verwertung und aufarbeitung der ablaugen und abgase der zellstoffindustrie: 1912-1925, by A. Schrohe; Papier Fabrikant, vol. 23, no. 3-19, pp. 30-33, 63-65, 89-92, 158-61, 251-53, 284-87, 293-96, 306-07, (Jan. 18—May 10, 1925).

   A total of 202 patented recovery processes are reviewed.
3. Waste Liquor and Gases of the Paper Industry. (Translation of above with supplements), by C. J. West.

   Technical Association Papers, Ninth Series, no. 1, p. 146-181, (June, 1926).

   A survey of the recent domestic and foreign literature on the utilization of waste liquors and gases of the pulp and paper industry. Five-hundred and thirty-four patents on recovery processes are listed.
4. Economical Use of Sulphite Liquor, by A. W. Allen, Chem. and Met. Eng., vol. 32, no. 18, p. 928-31, (Dec., 1925).

   Describes experiments in the utilization of sulphite waste liquor as a fuel.
5. Waste Problem at Newsprint Mills, by Vance P. Edwardes; Paper Ind., vol. 7, no. 3, p. 451-55, (June, 1925); also, Paper Mill, vol. 49, no. 23, p. 16, 18, 55-56, (June 6, 1925).
6. Sulphite Waste Liquor, by G. P. Genberg; Paper Tr. J., vol. 83, no. 15, p. 58-60, (Oct. 7, 1926).
7. Profit from Sulphite Waste Liquor, by R. H. McKee; Paper, vol. 23, no. 2, p. 5-7, 21 (Nov. 1, 1923).
8. Multiple Effect Evaporation, Anon., Paper, vol. 33, no. 11, p. 6-9, (Jan. 3, 1924).

   The article presents basic information bearing on evaporator design and operation, also a study of the problem of evaporating waste sulphite liquor.
9. Waste Sulphite Liquor, Review of Literature, Pulp and Paper Mag., vol. 24, no. 9, p. 260; no. 28, p. 821; no. 31, p. 910; no. 36, p. 1095, 1098; no. 43, p. 1298; no. 47, p. 1431, (Jan. 1-Dec. 30, 1926).

   Completing a review of the literature to date.

STREAM POLLUTION

1. Opinion and Decision of the Railroad Commission of Wisconsin Regarding Pollution of the Flambeau River at Park Falls, W. P. Report—234 (Feb. 20, 1926).

   A bibliography concerning stream pollution by pulp and paper mill wastes is appended.
2. Stream Pollution Bibliography, Paper Tr. J., vol. 82, no. 12, p. 47-48, (Mar. 25, 1926).

   An abstract from the above reference.
3. Waste and Stream Pollution, Technical Association Papers, Series 9, no. 1, p. 234-240, (June, 1926).
4. Pulp and Paper Mill Waste Problems, by L. F. Warrick; Eighteenth Annual Report, Engineering Society of Wisconsin; vol. 1, no. 3, p. 96-110, (July, 1926).
5. Progress of Waste Elimination in the Paper Industry, by G. D. Bearce; Industrial Management, vol. 71, p. 112-114, (Feb., 1926).
6. Purification of Wastes Discharged from Sulphite Pulp Mills, by Professor P. Klason, Proceedings of First Meeting of Swedish Chemists in Stockholm, May 29-30, 1908; also, Wochblatt fur Papierfabr., vol. 40, p. 2668, (1909); Jour. of Soc. Chem. In., vol 28, p. 100, (1909); Pulp Paper Mag., vol. 8, p. 185, (1910); Paper, vol. 3, no. 2, p. 9, (1911).

A review of improvements effected in several streams in Europe by ponding of Sulphite Wastes.

7. Utilization of Waste Sulphite Liquor, by Bjarne Johnsen and R. W. Hovey; Department of Interior, Canada, Forestry Branch; Bull. no. 66, 1919.

A complete review of the literature up to 1919 regarding stream pollution, under the sub-heading "Waste Sulphite Liquor Effluents."

Waste Causing Pollution

In determining the volume of waste from industries, however, actual measurements of flow were made, unless rather definite data were available from other sources concerning the volume of wastes from that particular class of industry.

The major industrial wastes encountered in the stream surveys were those from pulp and paper mills, others being negligible in comparison. There are 34 of these mills on the Lower Fox River between Neenah and Green Bay; 17 between Rhinelander and Nekoosa on the Wisconsin, and 1 on the Flambeau at Park Falls. As previously pointed out, the wastes from these industries are large in volume and certain of them have oxygen demands far in excess of those of domestic sewage.

Sulphite Pulp Mill Waste

From a study of the results obtained, it will be noted that the sulphite waste liquor is the most objectionable of those considered. The average oxygen demand is 16,233 p.p.m., and the oxygen consumed value 112,700 p.p.m. This waste was obtained from the digesters in the various mills just prior to the blow-off period. The results, therefore, represent the oxygen consuming power prior to dilution with wash water in the blow pits of the mills. The volume of this undiluted sulphite liquor averages about 2,000 gallons per ton of pulp produced.

Although the total solids content of the sulphite waste liquor averaged 106,325 p.p.m., the suspended solids averaged only 1,565 p.p.m. In other words, 104,760 p.p.m., of the total solids are in true solution and can not be filtered out of the wastes. It is this unstable organic matter in true solution that is largely responsible for the high oxygen demand of these wastes.

The loss on ignition was 93,640 p.p.m., indicating that the organic content amounts to about 81 per cent of the total solids. This, however, would be anticipated from the nature of the manufacturing process in which the non-fibrous portion of the wood is dissolved. The high oxygen-consumed value indicates that most of this organic matter is carbonaceous rather than nitrogenous in character.

Sulphite waste liquor is coffee brown in color and has a specific gravity of about 1.05. The 10 to 13 per cent of solids which it contains, according to analyses made by Professor P. Klason, are made up of lignin, hydro-carbon, protein, resin, fat, sulphur dioxide combined with lignin and lime. One gallon of liquor was found to contain the following amounts of these constituents:

Lignin	0.5250 lb.
Hydro-carbon	0.2843
Protein	0.0131
Resin and fat	0.0262
Sulphur dioxide combined with lignin	0.1750
Lime (CaO)	0.0787
Total	1.1023 lb.

Since approximately 2,000 gallons of waste liquor are produced in the manufacture of one ton of sulphite pulp, it is evident that from 1 to 1.2 tons of extracted material of the above consistency are wasted into the streams. In brief, about 50 per cent of the solids in the wood, combined with the sulphur and lime of the cooking solution, are discarded in the sulphite process.

As previously pointed out, this enormous waste of raw material has not been disregarded by the pulp and paper industry. During the 15 years following 1874, the year when the sulphite process was first developed on a practical scale, the utilization of the sulphite waste liquor was regarded as a matter of secondary importance. As the process grew in importance the increased pollution of rivers by this waste, with attendant objectionable conditions, has resulted in considerable research toward obtaining a satisfactory method for recovering the material extracted from the wood. It is sufficient to state that the researches have developed processes for the manufacture of a number of useful products, including dye-stuffs, impregnating materials, tannin, starch, paper sizing, cement, alcohol, fuel and fertilizer, which can be manufactured from the sulphite waste liquor, but under present market conditions none are commercially practicable.

Perhaps the most extensive utilization of the waste liquor has been in the production of the sulphite alcohol by fermentation, a process which has been used to a large extent in Europe. This process, however, makes use only of about 20 per cent of the solids in the waste, and therefore does not offer a remedy for the stream pollution problem.

It has been pointed out that one of the most promising of these methods for keeping this waste out of the streams is by evaporation and utilization of the solids as a fuel. Since about 0.1 per cent of sulphur dioxide is present in the liquor, the equipment required to remove approximately 7½ pounds of water in obtaining one pound of dry substance must be made of acid resistant material. If an efficient evaporator can be devised that will resist the corrosive action of the free sulphur dioxide, it will be possible to recover the heating value of this material, or from 8,000 to 8,500 B.t.u. per pound of dry substance, wihch is approximately 70 per cent of that for coal. A large part of the problem of keeping the wastes out of the streams will have been solved when the cost of evaporation is offset by the value of the fuel recovered.

Sulphate Pulp Mill Wastes

In the sulphate wood pulping process, a recovery system for the cooking liquors is an integral part of the mill. Unlike the sulphite process, the cooking liquor used in the sulphate process is strongly alkaline. Mechanical equipment has been devised which will withstand the chemical action, and most of the substances extracted from the wood in the process are concentrated in evaporators and burned in incinerators of the recovery plant. The small amount of these extracted substances and an appreciable amount of alkali in the so-called "black liquor" lost in the process, leave the mill in the form of washings from the diffusers. The amounts of such materials discharged with the washings are not so easily estimated, and it is probable that the losses at this point are considerably greater than is ordinarily supposed.

As the major portion of the material extracted from the wood is incinerated in the recovery system of the sulphate process, and since the chemical recovery amounts to about 85 per cent. in well operated mills, the wastes from the sulphate process would be expected to exert a much less oxygen demand upon a stream than the sulphite waste liquor.

Streams receiving sulphate pulp mill effluent have been observed to have a characteristic sulphurous odor. This odor is particularly noticeable where the water is very turbulent, that is, at dams, rapids or falls. The odor is probably caused by small amounts of mercaptan, di-methyl sulphide, di-methyl di-sulphide, and other such chemical substances, which are produced in the sulphate process. The mercaptides causing atmospheric pollution in the vicinity of sulphite mills, however, are volatile at low temperatures and but slightly soluble in water.

Considerable lime sludge is produced in the sulphate process. Formerly this was discharged directly into streams, having a disastrous effect on aquatic life and resulting in accumulations of the material at the sewer outlet. The sulphate mills in Wisconsin are now keeping most of this material out of the stream by one of three methods. One mill has installed a recovery system for the lime in order that it may be reused in the process. Another mill allows the waste to settle in a pond before the effluent is discharged into the nearby stream, and the remainder has installed rotary filters to remove the lime sludge from the waste in the

form of a partially dried cake. This is sold to nearby farmers as agricultural lime.

In the rag pulping process for the manufacture of high grade bond and writing paper, the raw material consists largely of old street rags and trimmings from garment factories. These rags are sorted into various grades as received and then subjected to preliminary treatment consisting of dusting, removal of buttons, and shredding. After shredding they are placed in rag boilers, or rotaries, where they are boiled with solutions of caustic lime or lime and soda ash. The coffee colored strongly alkaline solution drained from the rags at the end of the boiling procedure is the so-called "rotary waste." From all available data the total volume of this strong liquor is approximately 500 gallons per ton of pulp.

It will be noted from the analysis that the liquor has an average 5-day oxygen demand of 7,227 parts per million, and an oxygen consumed value of 31,667 parts per million. These relatively high values are largely accounted for by the considerable quantities of grease and dirt which have been boiled out of the rags. Some of the extracted material is old dyestuff, but this should exert little effect on the oxygen requirements. Variations in the oxygen demands obtained with different samples are accounted for by the varying proportions of greasy and dirty street rags and relatively clean rag clippings being treated. The high free ammonia content, 54 parts per million, is a further indication of the nitrogenous character of the substances removed in the waste.

The wastes produced consequently are largely fibrous in nature and have relatively little oxygen demand.

In addition to the color and ink removed from the paper, the wastes from this process contain a considerable quantity of dirt, glue, rosin size, and paper clay or filler. According to information obtained from a deinking mill using the soda process, the old paper stock contains from 5 to 50 per cent. clay, practically all of which is lost in the waste as a useless by-product. Tests made indicated that the average loss of all these substances is between 20 and 24 per cent. of the weight of the old paper, approximately 15 per cent. being clay. On the basis of these figures, the amount of material discharged from this mill, with a capacity of 60 tons of finished paper per day, was estimated to be about 1,000 tons per month.

Low oxygen demand and oxygen-consumed values obtained in the analysis of deinking mill wastes are accounted for by the relatively high amounts of inert matter. This conclusion is further substantiated by the analyses for solids, the suspended solids being in excess of the substances in solution, and the loss on ignition being fairly low.

Mills have attempted to utilize the substance removed from the old paper stock, particularly the clay, but the removal of the carbon of the printer's ink has offered a serious difficulty which is yet to be satisfactorily and economically overcome. The only attempt to treat the waste has been by sedimentation in ponds, but, without sludge-removing facilities, these ponds soon fill and the effluent contains practically the same amount of solids as the influent.

In pulp bleaching processes chlorinated lime or liquid chlorine in solution is allowed to remain in contact with the stock for a sufficient length of time to oxidize the coloring matter. The bleached pulp is then drained and washed prior to its use in the manufacture of paper. A portion of the drainings, the wash water and the lime sludge constitute the wastes from this process, and these are generally discharged directly into nearby streams. Analyses of these effluents indicate that they have little or no oxygen demand.

The paper mill effluents in general are classed as white water wastes. This term is applied because of the white appearance given the waste by the solids in suspension. This solid material is largely fibrous in nature, but also consists of varying proportions of the lesser ingredients of paper. These ingredients include small amounts of clay, alum, rosin and dyes. From all available information the average volume of these white water wastes is approximately 25,000 gallons per ton of finished product.

As the material leaving the paper mill in the form of white water represents a loss to the industry, various types of pulp-saving equipment, called savealls, have been developed to remove these solids from the wastes. They are either of the filtering type in which the solids in the white water are removed by some filtering medium such as a fine mesh wire screen, cloth, or mat of paper making material, or they are of the sedimentation type in which the solid material is allowed to settle to the bottom of a tank from which it is removed by scrapers and returned to the paper machines. Except in some few cases where mills are making a large variety of colors, it has been found possible with improved savealls now available to reduce the solids in the white water wastes to less than 0.5 pounds per thousand gallons.

The relatively low oxygen demand and oxygen-consumed values obtained with this waste might be expected from the foregoing discussion. The average biochemical oxygen demand was 56 parts per million, while the average oxygen-consumed value was 130 parts per million. It is evident, therefore, with the large volumes discharged, that the effect of the white water waste upon a stream is to reduce the oxygen content somewhat, as well as to form sludge deposits.

Determinations of the solids in the white water waste gave interesting information as to the efficiencies of various types of saveall equipment. Efficiencies ranging from 20 to 96 per cent. were shown by the analyses presented and those available in the mills. Formerly white water losses of as high as 4 to 7 pounds per 1,000 gallons were not unusual. With an average total solids content of 510 parts per million, equivalent to 2.4 pounds per 1,000 gallons after correcting for the solids in the river water, and an average suspended solids content of 157 parts per million, equivalent to 1.3 pounds per 1,000 gallons, it is apparent that much improvement has been accomplished in the reduction of white water wastes to a minimum.

The distribution of water in the manufacture of paper has been determined through white water surveys. While there is considerable variation according to the charcter of the product, the following data are of interest in this connection:

Water	Per cent of Total Water*
In finished paper	0.04
Evaporated off	1.97
Removed by second press	0.43
Removed by first press	1.36
From saveall to beaters	11.85
Washing down beaters	6.85
Overflow saveall to sewer	77.50

* See: Technologic Paper of the Bureau of Standards, No. 262. Also: Paper Trade Jour. 53d year, Oct. 30, 1924, p. 119-122.

The volumes of the white water wastes from different classes of paper mills show large variations, but 25,000 gallons per ton of product is considered a conservative average value.

POPULATION EQUIVALENTS OF MAJOR INDUSTRIAL WASTES USED IN WISCONSIN STREAM POLLUTION SURVEYS

Industrial Wastes	Units Used	Ave. 5 day Oxygen. demand, p.p.m.	Est. Oxygen Requirement lbs. per unit	Population Equivalent per unit
Paper Mill Effluents				
Sulphite pulp	Ton of pulp	16,233	270.6	1,630
Sulphate pulp	Ton of pulp	500	145.8	(1) 870
Rag pulp	Ton of pulp	7,247	30.2	(2) 180
De-inked pulp	Ton of pulp	263	20.5	123
Bleach	Ton of pulp	.....	....	....
Paper Mill Effluents				
Machine whitewater	Ton of paper	55	11.5	69
Saveall effluent	Ton of paper	55	8.8	53
Suction box and rolls	Ton of paper	248	1.5	9
Felt showers	Ton of paper	30	1.2	7
Strawboard Mill Effluents *				
Mixed wastes	Ton of product	934	266.7	1,600
Beater wastes	Ton of product	1,966	253.9	1,520
Machine wastes	Ton of product	236	33.	198

Note: (1) Value considered somewhat high.
(2) Value considered somewhat low.
* Calculated from data in U. S. P. H. Bulletin No. 97, pp. 13 & 16 (1918).

The third section of the volume covers the biological survey of Fox, Wisconsin and Flambeau Rivers, with special reference to pollution by C. L. Turner, professor of zoology, Beloit College.

The Emanueli Porosity Tester

An Instrument for Measuring the Porosity of Paper

By L. Emanueli, Societe Italiana Pirelli, Milan, Italy

The porosity of paper, as measured by the rate of passage of air through it, is receiving considerable attention. This property of paper is intimately related to it dielectric strength, its liquid saturation value, its resistance to permeation of moisture, and its uniformity of formation on the paper machine. The most common types of instruments for measuring this property make use of a relatively constant driving pressure and measure the rate of flow of air with a timing device. The air is either sucked through the paper by means of partial vacuum or is driven through under hydrostatic pressure. Instruments of the latter type are somewhat more simple and have been used more extensively than those of the former type, even though they are open to the objections that (1) the air forced through the paper is at a higher humidity than normal and this causes swelling of the fibers which reduces the penetrability of the paper, and (2) the pressure of the air is not uniform throughout the test. In either case the results are effected by slight leakage. The construction of some instruments is such that sensitivity is sacrificed. An instrument is described in this publication which the originator of the instrument prepared at the request of the Paper Testing Committee as a contribution to its work on standardization of paper testing. This instrument, which appears to be constructed on sound principles, avoids most of the objections mentioned above by taking into account the pressure drop through the instrument.

The American Society for Testing Materials is making considerable investigation of paper porosity measuring instruments and the committee expects to receive in the near future an article for publication describing some comparative tests, made as a

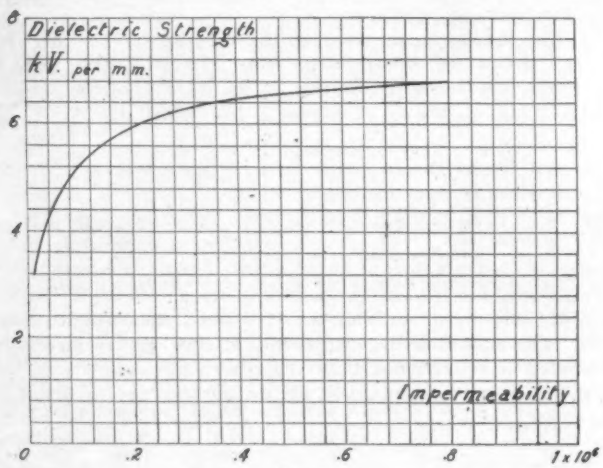

FIG. 1

part of this work of the Emanueli Porosimeter and other types.

It is proposed to discuss this subject at the annual meeting of the association.

B. W. SCRIBNER, Chairman,
Paper Testing Committee, TAPPI.

In cable manufacture it is very important to determine what is called the porosity or permeability of the paper used in the insulation of the conductors. By porosity is meant a coefficient which characterizes the property of allowing the flow of a fluid through the paper under a definite pressure. It is easier to understand that the porosity of the paper is the controlling factor in determining the time taken to saturate the paper insulation with the impregnating compound. The porosity is also a controlling factor in the dielectric strength of the paper.

Figure 1 represents the dielectric strength of different samples

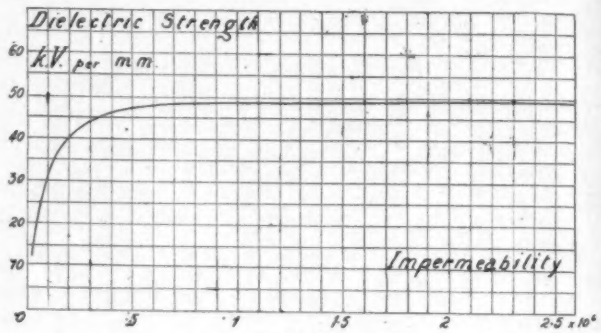

FIG. 2

of cable paper of the same composition but having different porosities. The paper has been tested after having been carefully dried. The results of the dielectric strength are given in volts per millimeter of thickness of paper against the value of the impermeability of the paper. Impermeability is the inverse of the porosity as will be explained below. The increase in the dielectric strength in relation to the increase of the impermeability of the paper is very marked.

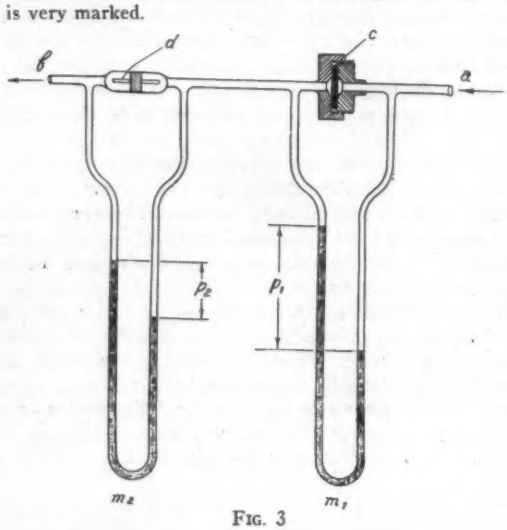

FIG. 3

Figure 2 shows the results of a similar test made on paper sheets having different impermeabilities and impregnated with mineral oil after having been dried. It is evident that the same relation exists between dielectric strength and impermeability as in the case of pure paper. This phenomenon is probably explained by the fact that the paper fibers act as barriers against the disrupting voltage. These same barriers reduce the flow of a fluid through the paper which appears to be more or less impermeable to the fluid.

If we call (p) the difference of pressure between the two sides of a sheet of paper; (S) the surface exposed to the flow; (s) the

thickness of the sheet; (η) the viscosity of the fluid, the volume (V) passing through the sheet in unit time may be written:—

$$V = P \cdot \frac{p}{\eta} \cdot \frac{S}{s} \qquad (1)$$

(This supposes the fluid to be incompressible.)

(P) is a constant depending upon the quality of the paper and may be called the *porosity* or *permeability constant.*

If the fluid is compressible, instead of being incompressible, the volume changes all along the thickness of the paper because the pressure changes from one side to the other of the sheet. The formula (1) may however be considered sufficiently accurate for all practical purposes if the difference of pressure is small enough. The flow must also be sufficiently slow if we wish to neglect the kinetic energy as has been done in formula (1)

The use of liquids to measure the constant (P) has been investigated but has been found to give inconsistent results. The fibers are, more or less, affected by all liquids; they swell or contract and in consequence diminish or enlarge the dimensions of the spaces left between the fibers. Of all the liquids water appears to be the worst as it is more readily absorbed by the fibers than any other. Gases have been found the most satisfactory for this purpose and are also much preferable by reason of their cleanliness and quickness (rapidity of flow through the paper).

Many types of instruments to measure the constant (P) using

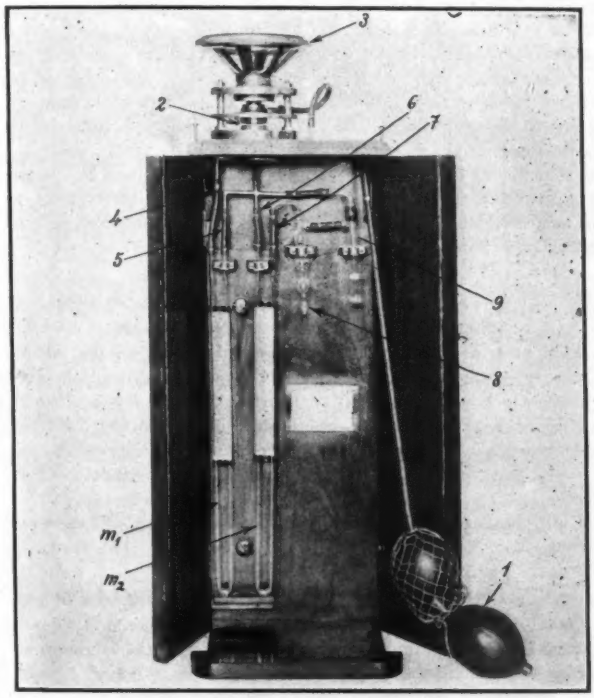

FIG. 4

the formula (1) can be conceived. Below is described a type, designed by the author of this paper, which has given for many years satisfactory results in the cable factories of the Pirelli Company.

The principle on which the instrument is based is to compare the paper to be tested with a standard of porosity or permeability, using air as the fluid which is flowing through. The standard of permeability is a glass capillary tube. Under the restrictions mentioned for formula (1) the volume of air which in unit time passes through a capillary of the radius (r) the length (λ) and under a pressure (P) is:—

$$V = \frac{p}{\eta} \frac{\pi r^4}{8\lambda}$$

where (η) is the absolute viscosity of air. All lengths are expressed in centimeters, volumes in cubic centimeters.

It is possible to have a capillary with a sufficiently constant radius and to measure it either with a microscope or by filling it with mercury which can be accurately weighed. The diameter can be figured with great accuracy from the length of the capillary and from the mercury filling same.

The viscosity of air (η) is not dependent upon the pressure, but

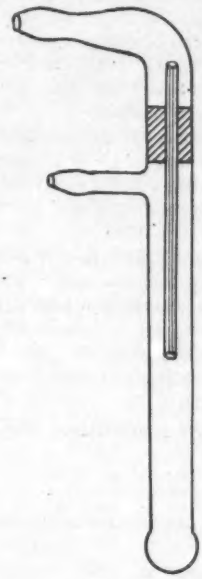

FIG. 5

depends upon the temperature as shown by the table calculated with the Sutherland Formula and given below.

t =	0°	5°	10°	15°	20°	25°	30° C.
η =	.0001733	.0001758	.0001783	.0001808	.0001833	.0001858	.0001883

The variation is very small if we consider that the temperature at which a test is taken in a laboratory can seldom vary between 10 to 30 degrees centigrade.

Knowing (r) and (λ) we can write:—

$$V = K \cdot \frac{p}{\eta} \qquad (2)$$

(k) may be called the constant of the capillary tube.

The method is schematically shown in Fig. 3, in which (d) is the standard capillary tube from which the constant has been ascertained, and (c) is the sheet of paper to be measured. An air flow is established, from (a) to (b), through both (d) and (c) connected in series. Two manometers (m_1) and (m_2) measure the difference of pressure (p_1) across the sheet of paper and (p_2) across the tube.

If we now write, as above, the relation between volume and pressure for the paper sheet and the tube we have—the volume being the same in both cases:—

$$V = P \cdot \frac{p_1}{\eta} \cdot \frac{S}{s}$$

$$V = K \cdot \frac{p_2}{\eta}$$

that is to say

$$P = K \cdot \frac{p_2}{p_1} \cdot \frac{s}{S}$$

which is independent of the air viscosity.

This provides a simple, rapid and sufficiently accurate method of measuring the porosity or permeability of the paper.

The instrument is represented by Fig 4. Air is forced through by a rubber bulb (1) and passes first through the paper under test, which is secured by means of the hand wheel (3) between the two bronze flanges (2) leaving a surface of 4 sq. centimeters free to the air flow. Air issuing from the paper passes through the cap-

illary tube (9) (which is described later) and issues from (8) into the atmosphere.

The water manometer (m_1) is connected across the paper by means of the tubes (4) and (5) and the other manometer (m_2) is connected across the capillary tube by means of (6) and (7).

The construction of the porosity standard is shown by Fig. 5. The tube is fastened into a large glass tube by means of a stopper which has the double purpose of keeping the capillary in position and of building a partition to force air through the capillary.

The porosity standard can be changed according to the quality of paper to be used but a tube 13 centimeters long and 0.036 centimeters in diameter will be found sufficient for the test of any quality of cable paper under examination.

The two water manometers are 30 centimeters long. The maximum difference of pressure which it is possible to measure is therefore never greater than a column of water of 30 centimeters. This ensures that the formulas (1) and (2) are used within the limits mentioned above.

Before reading the two manometers it is necessary to wait until the position of the water columns have reached a steady value. This does not happen instantaneously because of the fact that the tubings of the instrument have a certain volume and in consequence some time is taken to allow the pressure to reach its final value at all points. If sufficient attention is not paid to this point errors may arise in the test.

The porosity of the paper is ascertained from the following formula:—

$$P_0 = k \cdot \frac{p_2}{p_1} \cdot \frac{s}{S}$$

where (k) the constant of the standard of porosity is figured by:—

$$k = \frac{\pi}{8} \cdot \frac{r^4}{\lambda}$$

If all the measurements are expressed in centimeters (P_0) appears in absolute units having dimensions of a surface viz:—sq. centimeters.

In 1909 the author of this paper studied the porosity of paper for the Pirelli Company and introduced a unit which measured, instead of the porosity, the impermeability of the paper. This impermeability he called ($A_0 A_0$) is related to (P_0) in a simple manner

$$A_0 = \frac{1}{P_0}$$

The absolute unit of impermeability is, however, too small for practical use and a unit 10^8 times larger has been adopted. All the instruments belonging to the Pirelli Company are calibrated in terms of this unit. The curves in Figs. 1 and 2 are given in terms of (A). The impermeability values of paper of different grades, expressed in terms of this unit, are given below:

	P_0 (absolute units)	A (practical units)
Thin copying paper	70×10^{-12}	150,000
Filtering paper	3000×10^{-12}	3,000
Cigarette paper	10×10^{-12}	1,000,000
Drawing paper	10×10^{-12}	1,000,000
Packing paper	20×10^{-12}	500,000
Cardboard	15×10^{-12}	700,000
Blotting paper	2000×10^{-12}	5,000
Cable paper	200×10^{-12}	50,000
	30	300,000
	5	2,000,000

The figures for ordinary cable paper are nevertheless very great and a practical unit of paper impermeability 10^8 times the absolute may be preferable.

The instruments described and the units of porosity (P_0) or impermeability (A_0) provide a means of determining sufficiently exactly one of the more important properties of cable paper. It is to be hoped that the same method of testing may prove useful in other industries.

Paper Index Number Lower

WASHINGTON, D. C., September 7, 1927—July production index number for the paper industry was 104 compared with 114 for June and 123 for July of last year taking 1919 at 100 per cent according to the Department of Commerce.

Paper Testing

PAPIERPRUFUNG, EINE ANLEITUNG ZUM UNTERSUCHEN VON PAPIER. W. Herzberg. 6th. ed. 168 p. 110 text figures and 23 plates. Berlin, Springer, 1927. Price, 27 gold marks.

The first edition of Herzberg's work appeared in 1888, the fifth edition in 1921. The fact that any publisher carries a book through six editions indicates that it has filled a real need. There is really no book in English that covers the whole field of paper testing. Sutermeister has a chapter of 43 pages on paper testing; Griffin has a chapter (about 80 pages in the first edition; the second edition is not at hand) in his Technical Methods; Paper Testing Methods, published by the Technical Association, gives little more than the details of the methods approved by the association; then we have Beveridge's Papermaker's Pocket Book and Steven's Paper Mill Chemist. But none of these books give the wealth of detail found in Herzberg.

The scope of the book and the relative weight given to each of the subjects are best shown by the following table of contents: Strength properties, 1-63; square centimeter weight, 63-64; thickness, 64-66; ream weight, 67; ash content, 67-83; microscopic investigations, 83-144; pulp testing, 144-148; spots in paper, 148-154; sizing, 154-164; size-fastness, 164-179; grease-proof papers, 179-184; free chlorine and free acid, 184-187; constituents harmful to metals, 187-192; yellowing of paper, 192-196; blotting paper, 196-208; filter paper, 208-210; transparency, 210-215; penetration of air, 215-220; water-resisting properties, 220-224; finish or gloss, 224-226; sedimentation tests, 227-230; miscellaneous, 231-241. The appendix contains various data regarding German standards for paper, or bibliography of books on paper testing and a list of the studies made during 1920-1926 by the Material-prüfungsamt relating to paper testing. The 23 plates are microphotographs of various papermaking fibers; these include two which show the color reactions of the fibers with zinc chloroiodide and iodine potassium iodide solutions. A liberal number of footnotes refer to the original articles describing the tests. The literature is covered through the greater part of 1926.—CLARENCE J. WEST.

Technical Methods of Analysis

SECOND EDITION, 1927, REVISED AND ENLARGED

This work contains the analytical methods used in the laboratories of Arthur D. Little, Inc., Cambridge, Mass., and the first edition, which was written by Mr. Griffin in 1921, has been thoroughly revised and brought up to date by the author, with an addition of about three hundred pages.

Every paper mill chemist should have the book and it should also be in all mill laboratories.

The publishers are McGraw-Hill Book Company, 370 Seventh avenue, New York, N. Y.

TAPPI To Middletown, October 5, 6 and 7

Three days will be spent by the members of the Technical Association of the Pulp and Paper Industry and their friends in visiting the Miami Valley paper mills and plants supplying paper machinery to the industry.

The headquarters will be at Hotel Manchester, Middletown, Ohio, where meetings will be held in the mornings to discuss manufacturing problems. A Middletown Committee headed by Arthur R. Harvey of Gardner & Harvey Company, is in charge of the arrangements.

Windsor Locks Mill To Reopen

[FROM OUR REGULAR CORRESPONDENT]

WINDSOR LOCKS, Conn., September 5, 1927.—The paper mills formerly operated here by the J. L. N. Smythe Company of Philadelphia will be reopened in a few days by the Windsor Locks Mills, Inc., for the manufacture of papers for waxing, manifolds and paper specialties. New boilers and new heaters have been put as well as other machinery for the manufacture of the papers specified. Harvey L. Platt of Philadlelphia is president of the company and Ernest R. Adams is treasurer.

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Paper Making Industry

Clarence J. West, Chairman

Report of the Committee on Chemical and Physical Standards of the Technical Section of the Canadian Pulp and Paper Association. E. P. Cameron. Pulp and Paper International No. 150 (Feb. 1927); Proposed standard test conditions for determining the initial strength of pulp. G. P. Genberg. Paper Trade J. 84, No. 4, 47 (Jan. 27, 1927). A detailed description of the technique evolved by the Canadian Technical Section's committee on chemical and physical standards and the TAPPI committee on sulphite pulp for the preparation and testing of handmade test sheets of unbeaten sulphite pulp, and recommended for adoption as official. The method has been evolved with a view to making it suitable for the preparation of test sheets of other kinds of pulp as well, and so that the sheet thus prepared might be used for making all the usual physical tests.—A.P.-C.

Strength Testing of Chemical Pulp. I. Relation Between the Initial Strength of Bleached Sulphite Pulp and the Strength Properties Developed in Beating It. G. P. Genberg. Paper Trade J. 84, No. 8, 169-175 (Feb. 24, 1927); Paper Mill 50, No. 9, 92, 94, 98—102 (Feb. 26, 1927). Comparison of the beating qualities and strength of unbleached sulphite before and after beating led to the following conclusions: (1) A low initial Mullen test and low initial tearing resistance indicate an easy hydrating pulp of low strength. (2) A low initial Mullen and high tear indicate a free pulp requiring long beating to reach a maximum Mullen test. Such a pulp will maintain a high tear during beating. (3) A high initial Mullen and low tear indicate a pulp already hydrated to some extent. Such a pulp will reach a fair maximum Mullen in a short beating time. The freeness and tear will run low during beating. (4) A high initial Mullen and high tear will result in a high strength after beating, coupled with easy hydrating properties. **II. Strength Testing of Pulp.** Howard W. Laymon. Paper Trade J. 84, No. 8, 175-179 (Feb. 24, 1927) Paper Mill 50 No. 9, 122-128 (Feb. 26, 1927). A discussion of the standard test conditions for determining the initial strength of pulp proposed by TAPPI and by the Technical Section of the Canadian Pulp and Paper Associaion, in whch figures and observations based on experimental results are presented in support of the various steps of the proposed standard technique.—A.P.-C.

The Lignin Investigations of E. Schmidt. W. Fuchs and E. Honsig. Ber. 59B, 2850-56 (1926). Schmidt (Ber. 58B, 1394-403 (1925)) claims by treatment of plant material alternately with chlorine dioxide and sodium sulphite to separate it into insoluble "skeletal substance" and soluble "lignin" or "incrustants." By lignin he really understands all that is not "skeletal substance," and he uses the terms lignin and incrustants indiscriminately, although lignin can form only a part of the incrustants, as it differs from other incrustants (for example, pentosans and hexosans) in its methoxy, high carbon and lower oxygen content, degradation to benzene and phenolcarboxylic acids and its biological resistance. The fate of the lignin in Schmidt's process therefore seemed to be completely obscure and his work has been carefully repeated. His yields, by weight, were for the most part confirmed, but the authors were never able to effect a complete separation of pine wood by a single treatment alternately with chlorine dioxide and sodium sulphite; on repeated treatment, however, they finally obtained a residual crude fiber no longer giving any lignin reactions and corresponding in weight to Schmidt's statements. The sum of the yields at the various stages amounted to about 90 per cent of the original wood. Elementary analyses of the products obtained at the various stages showed that all the preparations, without exception, showed a smaller carbon content than the original material, the sum of the carbon recovered being only about 75 per cent. During the process, therefore, there occurs both decompositions, whereby a considerable part of the carbon is converted into substances of lower molecular weight (carbon dioxide, oxalic acid, etc.) and hydrolyses and oxidations, the latter reactions making up in weight of the products for the losses resulting in the decompositions. All the "lignin" preparations contained in general less than 40 per cent carbon (genuine lignin contains about 60 per cent) and the methoxyl content, which in genuine lignin is about 20 per cent and lies around 15 per cent in all the forms in which it is isolated, sinks extraordinarily even in the first states of the Schmidt process and finally disappears completely; the same is true of the phloroglucinol number. As has been found by Schmidt himself, phenol complexes are present in lignin and not only the most varied phenols but even partially methylated ones (guaiacol, vanillin, etc.) are destroyed by chlorine dioxide with the formation of carbon dioxide, oxalic acid, maleic acid and formic acid. "Genuine lignin" or the lignin present in plants is probably not completely identical with the forms in which it is isolated; such a view is confirmed by the behavior of various lignin preparations with chlorine dioxide. A Willstätter lignin treated once with chlorine dioxide was converted to a considerable extent into water soluble products and treatment with alcohol of the product thus altered left a substance (16% the original material) which gave polysaccharide reactions and which might therefore with some justification be called a "pollysaccaride of lignin" but the products which Schmidt thus designates do not deserve the name; they are polysaccharides of the wood or of its transformation products.—C.J.W.

Evaporation in Paper Making. Philip De Wolf. Paper Mill 49, No. 48, 14, 16 (Nov. 27, 1926). Brief description of multiple effect evaporators and of their application to alkali recovery in the sulphite, soda and sulphate processes.—A.P.-C.

Drying of Paper Products. Some Fundamental Factors. W. K. Lewis, W. H. McAdams and F. W. Adams. Pulp and Paper International No. 122-128 (Feb. 1927). The three important ways of drying porous sheet materials by evaporation are: (1) simple exposure of the material to unsaturated air, (2) heating the material by bringing one side of the sheet into contact with a solid heating element; (3) a combination of these two methods. In all three methods the drying operation, under constant drying conditions, consists of three stages; (1) a period of preheating during which but little drying occurs, (2) a period of drying at a rapid and substantially constant rate; (3) a period of drying at a rate decreasing rapidly as the moisture is driven out of the stock. Data are given to demonstrate that during the final stage of drying, under exposure to air alone at constant temperature, humidity and velocity, the drying rate is proportional to the content of free moisture and also to the humidity difference between stock and drying air. These data show that during drying of this sort the stock does not remain substantially at the wet-bulb temperature, even when quite wet, but rises somewhat above it at an early state of the operation, and then continues to increase in temperature throughout the drying process. The data also show that as drying progresses during this state, both diffusional resistance to escape of water vapor from the stock and

thermal resistance to flow of heat into the stock increase rapidly as the stock dries, but that the latter increases far more rapidly than the former. During the final state of drying, whether under conditions of exposure to air alone, or, as on drums, with alternate contact with the heating surface and exposure to air, so long as drying conditions are constant the logarithm of the total moisture content of the stock is linear with the time up until a late state in the drying operation. In consequence of this fact logarithmic paper offers a most convenient engineering method of analyzing and interpreting drying data. During the period of constant drying rate high velocity of the air over the drying surface is an effective means of increasing drying rate and capacity of drying equipment. During the final stage of drying at progressively decreasing rate as drying proceeds, high air velocity loses its efficacy in increasing rate; but decreasing sheet thickness becomes an important and valuable means of accomplishing the same result.—A.P.-C.

Distribution of the Uncondensed Gases in Paper Machine Driers. L. D. Tatley. Pulp and Paper International No. 106-107 (Feb. 1927). The tests described show that there is no appreciable separation of the air and steam in paper machine driers, at least after the driers have been working for some hours. On starting up the driers the air escapes in a number of ways: some gets out through the vents and some through the thermic valve until the gas reaches the same temperature as the steam; when the temperature of the gas is high enough to keep the thermic valves closed, some still escapes through the small grooves cut for the purpose in the faces of both the valves in the traps; some is blown past the water valves before they can close after emptying the buckets; and some dissolves in the condensate, even at comparatively high temperatures prevailing in the driers.—A.P.-C.

Investigation of Viscose Ripening. O. Faust, E. Graumann and E. Fischer. Cellulosechemie 7, 165-166 (Dec. 12, 1926). The determination of the degree of ripening of viscose is discussed with reference to the articles by Bernhardt (C. A. 20, 1719) and by Beuser and Schuster (C.A. 20, 2077 (1926). The following procedure is recommended: 25 g. viscose are diluted to 250 cc with distilled water, of which solution 25 cc. are diluted to 2 l. with water. One normal acetic acid is added until one drop over the neutral point is present. An excess of 0.1 normal iodine solution is added. The time required for the last two operations should not exceed 10 seconds. After 30 minutes the excess iodine is titrated with 0.1 normal thiosulphate solution. The test is repeated using sulphuric acid instead of acetic acid, and the difference between the values is a measure of the ripening process. The procedure yields reproducible figures and is suitable as a control test.—J.L.P.

The Riddle of Cellulose. Ebner. Zellstoff U. Papier 6, 389-392 (Sept., 1926). A review of recent researches on the chemistry of fibrous materials.—J.L.P.

Report on Testing Freeness of Pulp. Allen Abrams. Paper Trade J. 84, No. 8, 181 (Feb. 24, 1927); Paper Mill 50, No. 9, 108, 116 (Feb. 26, 1927). A brief description of the different types of freeness testers at present in use, with a suggestion that a standard instrument and method be adopted for carrying out the freeness determination.—A. P.-C.

Freeness of Groundwood Pulp. D. S. Davis. Ind. Eng. Chem. 19, 84-86 (Jan., 1927). Data presented show that increasing consistency decreases the freeness (rate of drainage) of groundwood stocks in a manner similar to that for sulphite stocks and that the mathematical relationship between consistency and freeness is the same for the two stocks. The paper contains a chart which enables freeness values determined at one consistency to be converted to freeness at other consistencies. This chart holds over a fairly wide temperature range. The freeness of groundwood is affected independently and simultaneously by the temperature and viscosity of the suspending medium. Freeness-temperature and freeness-viscosity plots are included. The freeness of groundwood stock is shown to decrease slightly upon standing.—A. P.-C.

Official Paper Testing Methods of the Technical Association of the Pulp and Paper Industry. Anon. Paper Trade J. 84, No. 4, 48-51 (Jan. 27, 1927). Texts are given of the official methods for determining machine direction of paper, ream weight, thickness, moisture, ash, tearing strength, casein (qualitatively), rosin (qualitatively), proteins (qualitatively and quantitatively), and starch (qualitatively and quantitatively).—A. P.-C.

American Paper Testing Methods. Anon. Zellstoff U. Paperier 6, 515-516 (Dec., 1926). American methods for preparing a test sample of paper and for determining the fiber composition are described.—J. L. P.

General Methods for the Testing of Paper. TAPPI Anon. Wochbl. Papierfabr. 57, 1332-1335 (Nov. 27); 1390-1391 (Dec. 11); 1461-1462 (Dec. 24, 1926). A German translation of official TAPPI paper testing methods as published originally in the Paper Trade J. 55, No. 11, 51 (1926).—J. L. P.

Stain for Microscopic Determination of Fibers. Th. Bentzen. Paper Trade J. 84, No. 9, 49-50 (Mar. 3, 1927). For photomicrographic reproduction of stained paper pulp slides in natural colors, Merritt's modification of the Herzberg stain was found satisfactory, when used as follows: (A) zinc chloride solution of 1.8 specific gravity, obtained by dissolving 100 g. of fused zinc chloride sticks in about 50 cc. of water; (B) distilled water 12.5 cc., potassium iodide 5.25 g., iodine 0.25 g. Mix 40 cc. of (A) with (B), let stand in the dark 24 hours, pipette the clear solution into a dark bottle and add a little iodine. Keep in a dark place. Prepare fresh solution once or twice a month. The brilliant color contrast fades after a short time. The technique used by the author in preparing his slides is described in detail.—A. P.-C.

Measuring Gloss on Paper Surface. L. G. Gottrall et al. World's Paper Trade Rev. 87, 84-92 (Jan. 14), 228-234 (Jan. 21, 1927); Paper Mill 50, No. 5, 17, 35-36 (Jan. 29, 1927). An account of the results obtained in the course of experiments carried out with a view to gaining some idea of the possibilities and uses of the Ingersoll glarimeter in paper testing. The instrument is considered to be just as accurate and sensitive as although not more so than, the eye of the experienced observer to discriminate between different amounts of gloss on paper. Its great advantage over the eye is that it gives a result independent of the personal equation of the operator, that an inexperienced person could be trained in a very short time to equal an experienced paper expert in discriminating between and evaluating the finish of different samples of paper, and, most important of all, it gives a numerical result which is absolute and independent of comparison with other samples which deteriorate on keeping or handling.—A. P.-C.

Rapid Method for the Determination of the Water Content of Sulphite Pulps. E. Schlumberger. Papierfabr. 24, 783-785 (Dec. 12, 1926). The moisture determination of Tausz and Rumm (C. A. 20, 1576 (1926)) is modified by using a measuring device of simpler construction and by substituting acetylene tetrachloride for the usual, inflammable petroleum. Thirty min. are required to ascertain the moisture content of sulphite pulps by this modified method, which is described in detail. The maximum deviation from the average of 10 tests was±).17 per cent. Vacuum and over drying methods gave comparable results.—J. L. P.

New Tester. H. C. Booth. J. Scientific Instruments (Oct. 1926); World's Paper Trade Review 86, 1842-1846 (Dec. 10, 1926). An apparatus is described for measuring the mechanical condition of paper. It was primarily designed for the estimation of the extent of the deterioration that had taken place in paper dielectric cables under various conditions of use. The principle of the method consists in measuring the energy required to tear through a small strip of the sample. The tear is made with a wire of specified size actuated by a falling weight, and the paper is held in a special form of clamp.—A. P.-C.

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Bankers and Accountants Developing Commom Understanding *

Address by Richard H. Mohler

[As a result of repeated conferences between the credit officers of banks throughout the country and certified public accountants, it may safely be said that an understanding between these two groups is near at hand, with respect to the form, extent, and scope of accountants' certificates attached to financial statements, as well as to the scope of the examinations represented by those certificates.

The matter has been summed up well by Richard H. Mohler in the accompanying article, which first was presented in Pittsburgh in the form of a paper before a joint meeting of the Pittsburgh branch of the Robert Morris Associates and the Pittsburgh chapter of the Pennsylvania Institute of Certified Public Accountants.

It is clear that bankers and the credit officers of banks, largely represented in the membership of the Robert Morris Associates, have gained a clear conception of the problems with which the accounting practitioner is confronted. As Mr. Mohler points out, the point of variance has been pretty well determined.

Mr. Mohler makes the definite suggestion that the Federal Reserve Bank form of statement be used generally, so that an opportunity may be given all parties in interest to familiarize themselves with what is meant by the certificate, and what sort of examination it represents. His comparison of the British practice with the American is interesting.—The Editor.]

Just what is an accountant's certificate, its import, and how much reliance can be placed upon it in extending credit? This question was asked and answered in a joint meeting of the Pittsburgh chapter of the Pennsylvania Institute of Certified Public Accountants and the Pittsburgh Chapter of the Robert Morris Associates representing the credit men of the locality. At about the same time similar meetings were held elsewhere.

These meetings, if reported correctly, might well have been one, judged from unanimity of expression from both the accountants and the credit men, and revealed that the question was of much more vital and widespread interest than was at first supposed. They revealed further that the ideal of the accountants and the credit men as regards audits was the same, but that each group seemed to rely upon the other to furnish the impulse which would make the ideal possible in practice. Both groups felt benefited by the exchange of views, and each, it is believed modified its own views in consequence. Thus there was inaugurated a co-operative movement between the grantors of credit on one hand and the accountants on the other, which, if followed throughout the country, cannot but result in the auditor being enabled to do better and more complete work and the grantors of credit being enabled thereby to grant credit more wisely and with greater safety.

Point of Variance

The point of variance between the two groups is that the banker and credit man usually want a condensed statement and a short certificate without qualification, whereas the accountants realize that, except in exceedingly few cases, such statements and certificates cannot be honestly written. Every accountant has tried it and has despaired of ever being able to write a short certificate which can give more than a limited idea of his views to the reader. He wishes to be honest, usually leans over backwards in the attempt, and finally pleases no one, including himself, when confronted with the necessity of preparing a curtailed report.

One concrete example will suffice to show the fallacy of such statements. A client requested for his banker a statement of such nature that he could at a glance read the present financial condition of his company. He was told that owing to numerous exceptions which would have to be made such a statement was an impossibility, but at his insistence it was tried. The result came so far from his ideas on the subject that he returned it; a second set of statements was written and returned with the explanation that some things were mentioned which would not be of interest and a request for their elimination. These things, it happened, were of such nature that the auditor felt that no mention of them would in certain circumstances be grossly misleading. In this case the accountant solved the difficulty satisfactorily to himself by writing a full report and a set of condensed statements and certifying the latter subject to the comments contained in the former.

One of the spokesmen for the credit men said:

"In granting credit in our various banks we lean very heavily, as of course you know, upon the reports of the accountants. We have occasion to consult with you individually concerning mutual customs. It seems to me—and I think in saying it I express the opinion of all my associates in the Robert Morris Associates—that there is much to be gained, for both the accountants and the banks, by the closest co-operation between us.

Two Things Necessary

"In order to accomplish that, two things, it seems to me, are primarily necessary: first, a clear understanding on the part of the accountants of what the bank credit men like to see, what they desire in the accountant's certificate and in their reports;

* From The American Accountant.

and, on the part of the bank credit men, a clear understanding of what the accountant's certificate means and what meaning may properly be drawn from the statements that they lay before us as a basis for credit.

"If we haven't that understanding we cannot pass the statements intelligently, because we know that you are employed by your clients under various arrangements and that the arrangements with your client may be very complete and extensive or sometimes rather brief.

"We want to co-operate with you; we want to discuss these things with you in a very frank and very friendly way to see if we can arrive at some clear understanding and some basis of co-operation."

Bankers Understand Problem

That the bankers and credit men have some idea of the only workable basis of co-operation is evidenced by the remarks of one of them which follow:

"In my opinion a certificate involves much more than the mere relationship of the banker to the accountant. The matter has been discussed in other places of the United States and, to my mind, that point has not been clarified.

"I believe the adjustment of the matter between the accountant and the banker almost impossible for the reason that the accountant is paid by the client, and as long as the client pays the bill he is the accountant's boss, unless the banker steps in, supports him, and helps to educate the client to the necessity of having such thorough and comprehensive work done as will ordinarily allow the accountant to write a certificate without fear and trembling."

And:

"I believe that the position of the accountant in relation to his client is the nub of the whole thing, and since the accountants have been invited by the credit men of Pittsburgh to bring their relationship closer and lean on them for aid in correcting that uncomfortable position, I think that they should hasten to do it.

"There is one thing certain to my mind, that the criticism of the certificate, with all the branches of discussion that take place upon it, will never amount to anything until the accountant and the banker get together on some sure, sound basis, and that basis must at least have some element in it of the banker backing up the accountant in his work.

"It certainly has been proved here tonight that it is the opinion of nearly every accountant here, or the unanimous opinion of the accountants here, that they are in no position to force thorough audits upon their clients, because the client pays the bill, is going to dictate the amount of money spent, and the only way to get around that is to call in a third party, who must be the banker. . ."

The suggestion was then made that in cases where the amount of work required to make a satisfactory audit was small and the client obstinate, the accountant should call upon the banker in an effort to get the work done. This the accountant cannot do, as he regards his employment as confidential and therefore not to be discussed with third parties unless permission is granted for such discussion.

It is true that accountants have suggested, and do suggest, to their clients that the omission of certain work will not be satisfactory to the client's banker, but in every such case the accountant making the suggestion is suspected of "farming" the work. The accountant is thus inevitably in the position of the fellow who was "damned if he did and damned if he didn't." If he does the work, he will be criticized by, and may lose, his client; if he doesn't, he will be criticized by the banker.

Only Ten Per Cent Audited

It is therefore, evident that the relationship of the accountant to his client is the reason for unsatisfactory statements but that the improvement of that relationship lies with third parties, the grantors of credit.

The bankers estimated that the loans made upon the basis of audited statements did not exceed ten per cent of the total loans made. The balance of ninety per cent of course, includes collateral and other fully secured loans which take care of themselves; but that leaves a large portion of the credit extended without proper safeguard, since it was extended upon the basis of guesswork rather than of known fact. That is a dangerous situation which could be remedied by doing the ordinary, expected, and prudent thing of requiring a check-up by a specified kind of audit, for example, the kind outlined by the Federal Reserve Bank in the Federal Reserve bulletin for April, 1917, entitled "Uniform Accounting"—"a tentative proposal submitted by the Federal Reserve Board, Washington, for the consideration of Banks, Bankers, Banking Accountants, Merchants, Manufacturers and Associations of Manufacturers; Auditors, Accountants and Associations of Accountants."

The plan, which was reprinted and given wide circulation, outlined a method for obtaining uniformity in so called "Baiance-Sheet Audits," and made specific suggestions as to the kind and quantity of verification desirable. A form of certificate and statement were also suggested.

Form of Certificate

If this or some similar plan were adopted by the grantors of credit as a standard requirement for the granting of loans in any large amount, it would be possible for the accountant to give them the short certificate and short statement they desire and still leave them in no doubt as to what conditions were. The certificate could state that

> We have audited the accounts of Blank & Company as at.... 19....and certify that the annexed balance sheet and summary of Profit and Loss have been prepared in accordance with the.....plan, and in our opinion correctly set forth the financial condition of the firm at.....and the results of its operations for the period from.....to.....

Following this, exceptions, on account of work which, because of extraordinary conditions, could not be performed, could be listed in order. These should refer specifically to that part of the plan not complied with in detail.

By following such a plan the audit for credit purposes would be well taken care of, the bankers and credit men would get satisfactory information upon which to base their risks, and the accountant and his client would know what was expected of them. Lacking it, the banker or credit man will be compelled to read their customer's full audit reports if they are to have the knowledge of their customer's business that they should have.

Other Classes of Audit

There remain the other classes of audit, all of which may, and probably will be used as a basis for credit to some degree, although they were not undertaken primarily for the procurement of credit. Such audits may mean much or little, depending upon the wishes of the client, and many people will be, and have been, induced to grant credit because of them, sometimes merely because the client stated that his books were audited by certified public accountants, when, as a matter of fact, the audit was a superficial one or perhaps the work consisted of merely closing the books and making such adjustments as appeared necessary, all without audit or independent verification.

British Plan Cited

How may the banker, credit man, investor, and the auditor himself be protected against misunderstanding in such cases as these The answer lies in such legislation as the British Companies (Consolidation) Act of 1908, requiring certain businesses to have an annual audit and making the auditor independent of the management and answerable only to the stockholders. Section 112

and 113 of this act, relating to the appointment, remuneration, powers, and duties of auditors, read that:

Each company shall at each annual general meeting appoint an auditor or auditors to hold office until the next annual general meeting.

If an appointment of auditors is not made at an annual general meeting, the Board of Trade may, on the application of any member of the Company, appoint an auditor of the Company for the current year, and fix the remuneration to be paid to him by the company for his services.

A director or officer of the Company shall not be capable of being appointed auditor of the Company.

A person, other than a retiring auditor, shall not be capable of being appointed auditor at an annual general meeting unless notice of an intention to nominate that person to the office of auditor has been given by a shareholder to the Company not less than fourteen days before the annual general meeting, and the Company shall send a copy of any such notice to the retiring auditor, and shall give notice thereof to the shareholders, either by advertisement or in any other mode allowed by the articles, not less than seven days before the annual general meeting:

Provided that if, after notice of the intention to nominate an auditor has been so given, an annual general meeting is called for a date fourteen days or less after the notice has been given, the notice, though not given within the time required by this provision, shall be deemed to have been properly given for the purposes thereof, and the notice to be sent or given within the time required by his provision, to have been sent or given at the same time as the notice of the annual general meeting.

The first auditors of the Company may be appointed by the directors before the statutory meeting, and if so appointed shall hold office until the first annual general meeting, unless previously removed by a resolution of the shareholders in general meeting, in which case the shareholders, at that meeting may appoint auditors.

The directors may fill any casual vacancy in the office of auditor, but while any such vacancy continues the surviving or continuing auditor or auditors, if any, may act.

The remuneration of the auditors of a Company shall be fixed by the Company in general meeting, except that the remuneration of any auditors appointed before the statutory meeting, or to fill any casual vacancy, may be fixed by the directors.

Every auditor of a Company shall have a right of access at all times to the books and accounts and vouchers of the Company, and shall be entitled to require from the directors and officers of the Company such information and explanation as may be necessary for the performance of the duties of the auditors. The auditors shall make a report to the stockholders on the accounts examined by them, and on every balance sheet laid before the Company in general meeting during their tenure of office, and the report shall state—

A—whether or not they have obtained all the information and explanations they have required; and

B—whether, in their opinion, the balance sheet referred to in the report is properly drawn up so as to exhibit a true and correct view of the state of the company's affairs according to the best of their information and the explanations given to them, and as shown by the books of the Company.

The balance sheet shall be signed on behalf of the board by two of the directors of the Company, or if there is any one director, by that director, and the auditor's report shall be attached to the balance sheet, or there shall be inserted at the foot of the balance sheet a reference to the report, and the report shall be read before the Company in general meeting, and shall be open to inspection by any shareholder.

Any shareholder shall be entitled to be furnished with a copy of the balance sheet and auditor's report at a charge not exceeding six-pence for every hundred words.

If any copy of a balance-sheet which has not been signed as required by this section is issued, circulated, or published, or if any copy of a balance sheet is issued, circulated, or published without either having a copy of the auditor's report attached thereto or containing such reference to that report as is required by this section, the Company, and every manager, secretary, or other officer of the Company who is knowingly a party to the default, shall on conviction be liable to a fine not exceeding fifty pounds.

In the case of a banking company registered after the fifteenth day of August Eighteen Hundred and Seventy-Nine—

A—if the Company has branch banks beyond the limits of Europe, it shall be sufficient if the auditor is allowed access to such copies of, and extracts from, the books and account of any such branch as have been transmitted to the head office of the Company in the United Kingdom; and

B—the balance sheet must be signed by the secretary or manager (if any), and where there are more than three directors of the Company by at least three of those directors, and where there are not more than three directors by all the directors.

Must Know Law

Palmer's "Company Law" (11th edition, 1921), in the chapter entitled "Audit," says:

An auditor who accepts office pursuant to the articles of a company is bound to:

A—conform to the terms of such articles;

B—make himself acquainted with his duties under the company's acts.

Ignorance of the above would not form any legal justification for not observing them.

The auditor's duties under the act seem to be well established. Palmer quotes at length from Lindley, L. J., in re London and General Bank (1895) 2 ch. 673, as follows:—

Auditor's Duties Defined

It is no part of an auditor's duty to give advice either to directors or shareholders as to what they ought to do.

An auditor has nothing to do with the prudence or imprudence of making loans with or without security. It is nothing to him whether the business of a company is being conducted prudently or imprudently, profitably or unprofitably. It is nothing to him whether dividends are properly or improperly declared, provided he discharges his own duty to the shareholders. His business is to ascertain and state the true financial position of the company at the time of the audit, and his duty is confined to that.

But then comes the question: How is he to ascertain that position? The answer is: By examining the books of the company. But he does not discharge his duty by doing this without inquiry and without taking any trouble to see that the books themselves show the company's true position. He must take reasonable care to ascertain that they do so. Unless he does this, his audit would be worse than idle farce.

Assuming the books to be kept as to show the true position of a company, the auditor has to frame a balance sheet showing the position according to the books, and to certify that the balance sheet presented is correct in that sense. But his first duty is to examine the books, not merely for the purpose of ascertaining what they do show, but also for the purpose of satisfying himself that they show the true financial position of the company.

An auditor, however, is not bound to do more than exercise reasonable care and skill in making inquiries and investigations. He is not an insurer; he does not guarantee that the books do correctly show the true position of the company's affairs; he does not even guarantee that his balance sheet is accurate ac-

cording to the books of the company. If he did, he would be responsible for an error in his part, even if he were himself deceived, without any want of reasonable care on his part—say, by the fraudulent concealment of a book from him. His obligation is not so onerous as this. Such, I take to be the duty of the auditor:

He must be honest—i.e., he must not certify what he does not believe to be true, and he must take reasonable care and skill before he believes that what he certifies is true. What is reasonable care in any particular case must depend upon the circumstances of that case. Where there is nothing to excite suspicion, very little inquiry will be reasonably sufficient, and in practice, I believe business men select a few cases at haphazard, see that they are right, and assume that others like them are correct also. Where suspicion is aroused, more care is obviously necessary; but, still, an auditor is not bound to exercise more than reasonable care and skill even in a case of suspicion and he is perfectly justified in acting on the opinion of an expert, where special knowledge is required.

But an auditor is not bound, to be suspicious as distinguished from reasonably careful. And Lopes, L. J., in re Kingston Cotton Mills Co. (No. 2), supra, page 232, added:

"Auditors must not be made liable for not tracking out ingenious and carefully laid schemes of fraud when there is nothing to arouse their suspicion, and when those frauds are perpetrated by tried servants of the company and are undetected for years by the directors; so to hold, would make the position of an auditor intolerable."

An auditor who commits a breach of his duty may be used by the company in an action, or may be proceeded against in a winding-up for misfeasance under Section 215 of the Act. But to be open to attack under the section an auditor must be an officer of the company. An auditor who is merely called in to audit the accounts pro-hac-vice is not an officer.

An auditor may set up the statute of Limitations.

Directors are entitled to presume that auditors, like other officials of the company, are doing their duty, and are not bound to supervise or test the auditor's work.

An auditor will be ordered to deliver up books and papers to the liquidator without prejudice to his, the auditor's lien.

The auditors' report is to state whether, in their opinion, the balance sheet is properly drawn up so as to exhibit a true and correct view, etc. In forming their opinion, the auditors must exercise their own judgment; they may take into account the advice of lawyers and other experts but cannot shelter themselves under an expert's opinion. It is a question of fact, to be determined by judge or jury, as to whether the auditor did in fact entertain the opinion he reported or concurred in reporting.

The words "books and accounts and vouchers" means all the books, not only the books of accounts. Hence minute book and letter books. Where the auditor's requirements are not complied with, the auditor should specify in his certificate in what respects they have not been complied with; and if there is no balance sheet on which to indorse the certificates, then the auditor should so specify in his report. But if the specification of the instances of non-compliance be lengthy, there seems no objection to the certificate stating that all the requirements have not been complied with, without specification of details, provided that it refers to the report for the details.

The auditor's right of access to the books of the company can be enforced in a proper case by mandatory injunction, but not where litigation is pending between the company and the auditors, and the company may desire to appoint other auditors. Is an auditor, referring to a secret reserve as an "Undisclosed Asset" justified in reporting that "in his opinion the balance sheet is properly drawn so as to exhibit a true and correct view of the company's affairs? The matter is left to the auditor and the honesty of his opinion, which, in turn, is a question of fact to be determined in court.

Different From American Procedure

How different this is from our own procedure, where the action taken depends upon the circumstances surrounding it. It is known beyond doubt what is expected of the accountant, what he may properly be called upon to do and say, and how, when, and where. We know how much reliance may be placed upon his certificate, for we know what preceded it. In the United States, however, no such condition exists; either too much or too little is expected of the accountant and believed of his reports and certificates.

If he alone bore the consequences of this misunderstanding all might still be well, for a comparatively few people would be affected. But, as a matter of fact, the entire world of credit is affected, including the investor.

It seems, therefore, that the accountant's certificate may be relied upon only when it is free from misunderstanding as to its import, and that such freedom from misunderstanding can be gained only by abandoning it altogether in favor of full reports, or when (a) the grantor of credit insists upon proper supervision of the accounts of the procurers of credit by accerdited accountants in a standard manner, such as the Federal Reserve Board's plan; and when (b) incidental credit is curtailed by the grantor unless the procurer of credit, whether it be for a new enterprise or one already established, can say that he employs competent auditors under some such plan as that established under the British Companies Act.

If these things are done, the discussion of accountant's certificates will be settled, for there will be nothing left to discuss; all parties interested will know what has been done, and knowing that, what their conduct in any given situation may safely be.

Maurice Hoopes Director of New Power Company

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., August 29, 1927.— Maurice Hoopes, president of Finch, Pruyn & Co., of this city, is on a temporary board of directors of a new $100,000,000 gas and electric company to be known as the New York Power and Light Corporation and to be formed by a merger of six large power concerns in the territory from Albany to Plattsburg on the north and Oneida on the west. The consolidation will include the Adirondack Power and Light Corporation which in recent years has had a close connection with the papermaking industry of the Hudson Valley. This company has an equal interest with Finch, Pruyn & Co. and the International Paper Company in the $1,000,000 hydro-electric power plant at Feeder Dam, Glens Falls, and also operates under lease the huge plant at Sherman Island of the I. P. Co. The Adirondack Corporation is also said to be interested with paper concerns either directly or indirectly in a number of power sites along the Hudson which are to be developed when the Conklingville Dam is completed.

Paper Mill Employment Increases

[FROM OUR REGULAR CORRESPONDENT]

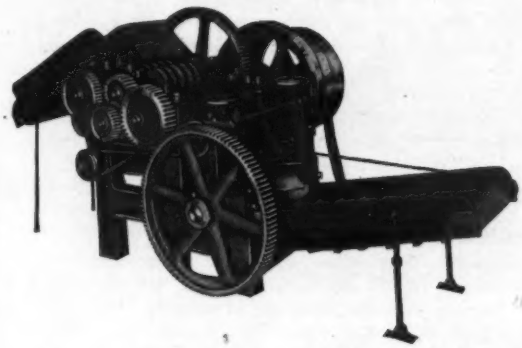
WASHINGTON, D. C., September 7, 1927—There was a slight increase in employment in the paper, pulp and paper box industries in July as compared with June according to figures which have just been made public by the Bureau of Labor Statistics, Department of Labor.

Reports were received by the Bureau from 216 paper and pulp plants who gave their June employment at 56,001, increasing slightly in July to 56,090, an increase of 0.2 per cent. The payrolls in these identical plants, on the other hand, decreased from $1,468,144 in June to $1,441,251 in July, a decrease of 1.8 per cent.

The Bureau also received reports from 179 paper box factories who gave their June employment at 18,654 increasing also slightly in July to 18,763, an increase of 0.6 per cent. The payrolls in these plants also increased from $408,828 in June to $412,910 in July, an increase of 1 per cent.

PERKINS HOLYOKE

Rag and Stock Cutter



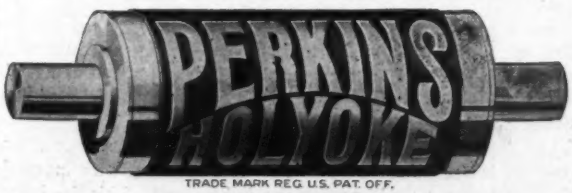
Excess of 100 lbs. per minute with 7½ h.p.

Cutting costs are governed by the output of power consumed in ratio with machine capacity.

The Perkins Rag and Stock Cutter carries the material from the feed apron to the slitters. As it is cut into strips it is conveyed by an intermediate apron lengthwise, to a spiral knife which cuts it into uniform blocks of size desired. Delivery apron carries the pieces wherever you want them delivered.

Perkins Rag and Stock Cutter is dustless in operation, makes no waste of stock and gives you clean shear-cut. The stability of Perkins machines is indicated by the fact that cutters made as long as thirty years ago—without, of course, many of the new Perkins improvements—are still doing satisfactory service in New England plants.

B. F. Perkins & Son, Inc., Holyoke, Mass.



TRADE MARK REG. U.S. PAT. OFF.

COTTON ROLLS - PAPER ROLLS - EMBOSSING ROLLS - CHILLED IRON ROLLS - GRANITE PRESS ROLLS - WEB SUPERCALENDERS - GLASSINE SUPERCALENDERS - FRICTION CALENDERS EMBOSSING CALENDERS - SHEET CALENDERS - PLATERS - MULLEN PAPER TESTERS TENSILE TESTERS - VENTILATING FANS - RAG CUTTERS - STOCK CUTTERS - PAPER DAMPENERS BLEACH EJECTORS

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Speed is only one of several reasons why mills in ever increasing numbers are installing DAYTON HIGH SPEED BEATERS. Were speed the only consideration fewer mills would install them.

The acceptance of Dayton High Speed Equipment—either new or holland engines reconstructed—is based upon all six of the advantages claimed for it, and not upon "speed" alone. Superintendents in mills where "Daytons" are in use will be glad to discuss Dayton High Speed equipment with you, from which you can form your own estimate of its probable worth to you.

Not One—But All Six!

Heavier Furnishes
Faster Beating
Greater Output
More uniform product
Saving in power
Saving in labor

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501 5th Avenue, New York, N. Y.

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High Speed Beaters

Trade Marks Department

CONDUCTED BY NATIONAL TRADE-MARK CO., WASHINGTON, D. C.

The following are trade mark applications pertinent to the paper field pending in the United States Patent Office, which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade Mark Company, Barrister Bldg., Washington, D. C., tade-mark specialists. As an additional service feature to its readers, PAPER TRADE JOURNAL gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering.

SUBS.—No. 239,112. The Hospital Specialty Company, Cleveland, Ohio. For cold cream remover made in the form of paper napkins.

DECO-WRAP.—No. 242,744. Paper Supply Company, Los Angeles, Cal. For decorative and fancy papers.

BUCKSKIN.—No. 245,526. The American Envelop Company West Carrollton, Ohio. For mailing envelopes.

THE X-RAY LINE.—No. 247,897. Lefeburt, Corporation, Cedar Rapids, Iowa. For blank books, indexes, ledgers, (bound and loose-leaf), tray binders, and index tabs.

KASDUM.—No. 249,004. Joseph Grossman, Steubenville, Ohio. For toilet tissue paper.

SEAMAN PAPER COMPANY.—with fanciful picture of a seaman at the wheel—No. 228,490. Seaman Paper Company, Chicago, Ill. For coated printing paper.

FABLEGRAM.—No. 232,448. Brown & Bigelow, St. Paul, Minn. For greeting cards.

UNITAB.—No. 233,399. Student's Publishing Company, Oakland, Cal. For separator sheets for loose-leaf folders.

RAJAHTONE.—No. 250,659. Charles W. Williams Co., Inc., New York City. For decorative box papers.

SULTAN TONE.—No. 250,660. Charles W. Williams Co., Inc., New York City. For decorative box papers.

UNIVERSAL BLUE BOOK.—No. 250,873. Universal Portland Cement Co., Chcago, Ill. For blank books.

SEE ALL SERVICE.—No. 251,054. Karl J. Guhne, St. Louis, Mo. For record cards and work sheets.

BEN MONT.—No. 251,164. Bennington Wax Paper Co., Bennington, Vt. For wax paper, lunch rolls, Christmas wrapping paper, shelf paper.

SUNSHINE GREETING.—No. 250,221. Bradner Smith & Co., Chicago, Ill. For writing paper, envelopes, and Bristol board.

PERSIATONE.—No. 251,254. Charles W. Williams Company, Inc., New York City. For decorative box paper.

SPARKLETONE.—No. 251,597. Charles W. Williams Company, Inc., New York City. For decorative box papers.

SAXOLIN—No. 250,440. Chase Bag Company, New York City. For bags, sacks, and containers.

OLD IRONSIDES—No. 251,692. Star Corrugated Box Company, Inc., Maspeth, N. Y. For paper and corrugated fiber boxes.

Blake, Moffitt & Towne Open New Building

[FROM OUR REGULAR CORRESPONDENT]

SACRAMENTO, Cal., August 26, 1927.—With the opening on Saturday, August the 27 of their new building located at 1115 Front Street, Blake, Moffitt & Towne, large pioneer firm of wholesale paper dealers will begin doing business in what is one of the most modern and up-to-date structures of its kind.

The building is located in the heart of the wholesale district and will be served by a spur track in the front. The building is of reinforced concrete construction throughout and contains two stories and a basement. It is so designed as to distribute the load uniformly all over the foundation. This feature is unique since it eliminates the possibility of settling and cracking.

Much thought has been given to the ease and efficient handling of the large stocks of papers, paper products and twines, which will be carried. For example, freight cars may pull up to the front of the building and be quickly unloaded, because the first floor has been designed so as to be level with the car platform In the basement an ample loading arcade has been provided which consists of a platform on the same level as the floor of the tracks and an area large enough to accommodate the loading of four trucks at one time. As this loading arcade faces the street in the rear, trucks may start right off on their deliveries without any confusion or lose of time.

It is strictly fireproof throughout, all windows being of wire plate glass provided with fusible lengths making them self-closing in case of fire. This is also true of the steel doors and the elevator doors.

The first floor contains the executive and sales offices which are light, airy and convenient. On the walls of the sales room, space has been provided for fine printing specimens, the work of the recognized western printers.

Other features of the building include two large electric freight elevators and a spiral delivery chute which greatly speeds up the handling of merchandise.

The Sacramento Division of Blake, Moffit & Towne has for several years been under the management of E. W. Benson who has had a long connection with the firm. He is widely known in this section having represented the company even prior to the establishment of the Sacramento Division.

The opening of this new Division will be celebrated by an Open House Day on Saturday, August 27, at which time friends and customers of the house are invited to visit and inspect the new building and its facilities. The offices will be especially decorated for the event and there will be music. A large number are expected to visit the plant.

In addition to Sacramento and San Francisco, where the firm was founded in 1855, Blake Moffit & Towne have divisions located at Los Angeles, Portland, Oakland, Fresno, San Jose, San Diego, Phoenix, Santa Rosa, Boise, Idaho and Salem, Ore. The Tacoma Paper and Stationery Company of Tacoma, Wash., is also affiliated with the chain while agencies are established at Stockton, Eureka, Watsonville and San Anselmo.

For many years Blake, Moffit & Towne have specialized in fruit papers and various fuit packers supplies. Such merchandise is sold in considerable volume in this section and will be a feature in their warehouse stock.

In addition complete lines of fine papers including nationally advertised brands of bonds and writing papers, book papers, cover papers, ledgers, cardboards, and envelopes and in addition sell a large volume of wrapping papers, paper bags, paper boxes and containers twines and cordage.

The policy of the Sacramento Division will be to carry on hand at all times complete stocks of all the standard lines from which deliveres will be made not only to Sacramento but the entire valley including the State of Nevada.

Missiquoi Employees Get Group Insurance

In cooperation with their employer, the employees of the Missiquoi Pulp and Paper Company, of Sheldon Springs, Vt., have acquired group life insurance approximating $200,000. The insurance program also includes health and non-occupational accident benefits.

A cooperative feature of the plan, which is being underwritten by the Metropolitan Life Insurance Company, provides for joint contributions by employer and employees towards premium payments.

Each subscribing employee in the main group covered receives $1,000 life insurance, and sick and accident benefits of $10 a week. Subject to the terms of the contract, these weekly benefits will continue in each case of disability for a maximum of thirteen consecutive weeks.

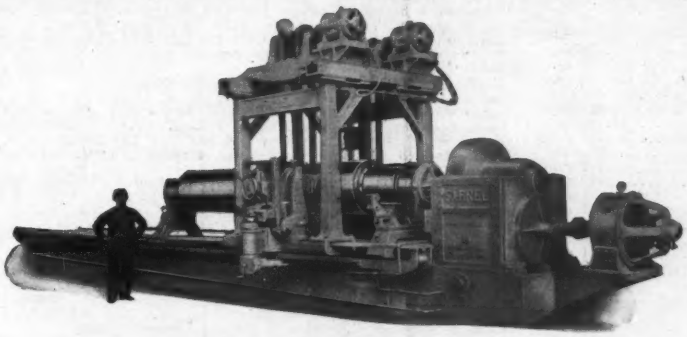
Through the inclusion of a total and permanent disability clause in the life insurance contract, an employee suffering such incapacitation before age 60, will receive the full amount of his life insurance in monthly installments.

The group plan includes the advantages of a health advisory bureau, which is maintained by the insurance company and regularly distributes pamphlets on disease prevention and health conservation.

FARREL

FARREL NEW TYPE ROLL GRINDER

Built in 24", 32", 36" and 42" sizes. 36" grinder shown in cut.



New crowning device, geared head, automatic lubrication. Electrically driven.

FARREL CALENDERS AND CALENDER ROLLS

ARE MADE IN ALL SIZES AS LARGE AS 264" ON THE FACE.

FARREL FOUNDRY & MACHINE CO.

ESTABLISHED 1848

ANSONIA, CONN.

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Design—Build—Rebuild
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POWER PLANTS *and*
COMPLETE PAPER MILL
PROJECTS

One organization under one contract guarantees price, delivery date and satisfactory results.

Representative
Ferguson customers in the paper industry:

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A. P. W. Paper Co.
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Chillicothe Paper Co.
Warren Mfg. Co.
Spencer-Wynne Paper Company
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Oswego Falls Corp.
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SOLE AGENTS IN AMERICA FOR
ETTLINGEN MITSCHERLICH UNBLEACHED SULPHITE
ROSENBERGER BLEACHED SULPHITE
ZILINA BLEACHED SULPHITE
STAFFEL RAG PULP
BLEACHED AND UNBLEACHED

Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING SEPTEMBER 3, 1927

SUMMARY

Cigarette paper .....425 cs.
Wall paper .....14 bls., 19 cs.
Paper hangings .....24 bls., 21 cs.
News print .....621 rolls, 49 bls.
Printing paper.....53 rolls, 68 bls., 326 cs.
Wrapping paper .....13 cs.
Packing paper .....10 cs.
Kraft paper .....159 rolls
Gallic paper .....3 cs.
Pergamyn paper .....20 cs.
Writing paper .....11 pkgs., 39 cs.
Envelopes .....31 cs.
Stationery .....14 cs.
Gold paper .....7 cs.
Baryta coated paper .....291 cs.
Metal paper .....52 cs.
Surface coated paper .....153 cs.
Stencil paper .....55 cs.
Filter paper .....10 bls., 12 cs.
Drawing paper .....31 cs.
Decalcomania paper .....35 cs.
Cover paper .....2 cs.
Wood pulp paper .....4 cs.
Silk paper .....7 cs.
Flintstone paper .....17 bls.
Straw board .....819 rolls
Miscellaneous paper
823 rolls, 55 bls., 113 pkgs., 169 cs.

CIGARETTE PAPER

R. J. Reynolds Tobacco Co., Vincent, Havre, 200 cs.
Standard Products Corp., Vincent, Havre, 80 cs.
Liggett & Myers Tobacco Co., Vincent, Havre, 15 cs.
Standard Products Corp., De Grasse, Havre, 130 cs.

WALL PAPER

F. J. Emmerich, Laconia, Liverpool, 2 bls.
S. Stern Stiner, Berengaria, Southampton, 1 cs.
S. Stern Stiner, Cleveland, Hamburg, 1 ble.
F. J. Emmerich, Cleveland, Hamburg, 5 bls.
Globe Shipping Co., Cleveland, Hamburg, 3 bls.
F. Blank, Cleveland, Hamburg, 18 cs.
F. A. Binder, Sierra Ventana, Bremen, 3 bls.

PAPER HANGINGS

W. H. S. Lloyd & Co., Laconia, Liverpool, 7 cs., 1 ble.
W. H. S. Lloyd & &Co., Minnesota, London, 23 bls., 8 cs.
Whiting & Patterson Co., Inc., Majestic, Southampton, 2 cs.
Whiting & Patterson Co., Inc., Mauretania, Southampton, 4 cs.

NEWS PRINT

The Times Union, Stockholm, Gothenburg, 111 rolls.
Perkins, Goodwin & Co., Sierra Ventana, Bremen, 274 rolls.
F. Henjes, Jr., Inc., Cleveland, Hamburg, 62 rolls.
National City Bank, Cleveland, Hamburg, 32 bls.
Parsons & Whittemore, Inc., Bremen, Bremen, 174 rolls.
Walker, Goulard & Plehn Co., Inc., Bremen, Bremen, 17 bls.

PRINTING PAPER

Baldwin Universal Co., American Shipper, London, 6 rolls.
P. C. Zuhlke, Arabic, Antwerp, 76 cs.
Keuffel & Esser Co., Cleveland, Hamburg, 47 rolls.
Perkins, Goodwin & Co., Cleveland, Hamburg, 68 bls.
G. D. Kuper & Bros., Paris, Havre, 1 cs.
National City Bank, Carlsholm, Stockholm, 33 cs.
Walker, Goulard & Plehn Co., Inc., Carlsholm, Stockholm, 151 cs.
C Steiner, Rotterdam, Rotterdam, 1 cs.
E. Dietzgen & Co., Rotterdam, Rotterdam, 24 cs.

WRAPPING PAPER

Birn & Wachenheim, Arabic, Antwerp, 13 cs.

PACKING PAPER

Haule Wax Paper Manfg. Co., Cleveland, Hamburg, 10 cs.

KRAFT PAPER

Arkell Safety Bag Co., Stockholm, Gothenburg, 159 rolls.

GALLIC PAPER

Keuffel & Esser Co., Tuscania, London, 3 cs.

PERGAMYN PAPER

F. C. Strype, Cleveland, Hamburg, 20 cs.

WRITING PAPER

The Eleto Co., Mauretania, Southampton, 7 cs.
J. E. Bernard & Co., Mauretania, Southampton, 4 cs.
Globe Shipping Co., Berengaria, Southampton, 5 cs.
A. T. Lewis & Co., Vincent, Havre, 1 cs.
T. D. Downing & Co., Vincent, Havre, 1 cs.
Abraham & Strauss, Vincent, Havre, 1 cs.
W. J. Byrnes, Vincent, Havre, 4 cs.
American Express Co., Vincent, Havre, 1 cs.
A. Murphy & Co., Sierra Ventana, Bremen, 4 cs.
J. E. Bernard & Co., Majestic, Southampton, 5 cs.
Japan Paper Co., De Grasse, Havre, 1 cs.
Globe Shipping Co., Paris, Havre, 11 pkgs.
Freedman & Slater, Paris, Havre, 4 cs.
Musa Hartzell Ducasse, Paris, Havre, 1 cs.

ENVELOPES

Japan Paper Co., American Shipper, London, 4 cs.
H. Reeve Angel & Co., Inc., Tuscania, London, 1 cs.
J. Beckhard & Co., Bremen, Bremen, 26 cs.

STATIONERY

Dyson Shipping Co., American Shipper, London, 14 cs.

GOLD PAPER

Jonas & Co, Takaoka Maru, Kobe, 2 cs.
Richard Shipping Co., Pres. Harding, Bremen, 5 cs.

BARYTA COATED PAPER

Globe Shipping Co., Sierra Ventana, Bremen, 90 cs.
Globe Shipping Co., Pres. Harding, Bremen, 101 cs.
Globe Shipping Co., Sierra Cordoba, Bremen, 100 cs.

METAL PAPER

Hensel, Bruckman & Lorbacher, Bremen, Bremen, 52 cs.

SURFACE COATED PAPER

G. W. Sheldon & Co., American Shipper, London, 1 cs.
P. C. Zuhlke, Arabic, Antwerp, 63 cs.
Gevaert Co. of America, Arabic, Antwerp, 82 cs.
Whiting & Patterson Co., Inc., Cleveland, Hamburg, 7 cs.

STENCIL PAPER

G. W. Sheldon & Co., American Shipper, London, 1 cs.
Arlac Dry Stencil Co., Cleveland, Hamburg, 54 cs.

FILTER PAPER

Blackman & Blackman, Roussillon, Bordeaux, 10 bls.
Taiyo Trading Co., Takaoka Maru, Nagoya, 6 cs.
H. Reeve Angel & Co., Inc., Tuscania, London, 6 cs.

DRAWING PAPER

Keuffel & Esser Co., Cleveland, Hamburg, 31 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., Adriatic, Liverpool, 24 cs. (duplex)
L. A. Consmiller, Sierra Ventana, Bremen, 8 cs.
Phoenix Shipping Co., Pres. Harding, Bremen, 3 cs.

COVER PAPER

International Forwarding Co., Cleveland, Hamburg, 2 cs.

WOOD PULP PAPER

H. D. Catty Co., Rotterdam, Rotterdam, 4 cs.

SILK PAPER

J. Beckhard, Rotterdam, Rotterdam, 7 cs.

FLINTSTONE PAPER

United Hardware & Tool Corp., Sierra Ventana, Bremen, 17 bls.

STRAW BOARD

A. Vuyk, N. Amsterdam, Rotterdam, 112 rolls.
Haas Bros, N. Amsterdam, Rotterdam, 117 rolls.
Perkins, Goodwin & Co., N. Amsterdam, Rotterdam, 142 rolls.
Perkins, Goodwin & Co., Rotterdam, Rotterdam, 81 rolls.
Haas Bros., Rotterdam, Rotterdam, 106 rolls.
Spaulding & Tewksbury, Rotterdam, Rotterdam, 95 rolls.
A. Vuyk, Rotterdam, Rotterdam, 166 rolls.

MISCELLANEOUS PAPER

G. W. Sheldon & Co., Berengaria, Southampton, 2 cs.
Crepe Kraft Co., Stockholm, Gothenburg, 67 rolls.
The Borregaard Co., Inc., Stockholm, Gothenburg, 257 rolls.
Arkell Safety Bag Co., Stockholm, Gothenburg, 274 rolls, 34 bls.
A. Smith & Co., Carlier, Antwerp, 1 cs.
Arnhold & Co., Takaoka Maru, Canton, 5 cs.
Heemsoth, Basse & Co., N. Amsterdam, Rotterdam, 113 pkgs.
Perkins, Goodwin & Co., Cleveland, Hamburg, 21 bls.
Guaranty Trust Co, Innoko, Rotterdam, 225 rolls.
W. H. S. Lloyd & Co., De Grasse, Havre, 2 cs.
Downing & Co., De Grasse, Havre, 26 cs.
Hensel, Bruckman & Lorbacher, De Grasse, Havre, 12 cs.
Hensel, Bruckman & Lorbacher, Paris, Havre, 4 cs.
Japan Paper Co., Paris, Havre, 10 cs.
Keller-Dorian Paper Co., Paris, Havre, 9 cs.
Miller-Wright Paper Co., Breedyk, Rotterdam, 1 cs.
S. Gilbert, Rotterdam, Rotterdam, 16 cs.
Tamm & Co., Rotterdam, Rotterdam, 20 cs.
Globe Shipping Co., Rotterdam, Rotterdam, 8 cs.
J. Beckhard, Rotterdam, Rotterdam, 27 cs.
Portenoy Co., Mauretania, Southampton, 2 cs.
Japan Paper Co., C. Biancamano, Genoa, 24 cs.

RAGS, BAGGINGS, ETC.

R. Bishop Manfg. Co., Vincent, Dunkirk, 184 bls. rags.
W. Steck & Co., Vincent, Havre, 118 bls. jute waste.
B. D. Kaplan, Vincent, Havre, 184 bls. rags.
V Galaup, Vincent, Havre, 142 bls. rags.
E. Mayer, Vincent, Havre, 320 bls. rags.
L. Leibowitz, Stockholm, Gothenburg, 4 bls. rags.
B. D. Kaplan, Carlier, Antwerp, 2 bls. rags.
Dodwell & Co., Takaoka Maru, Kobe, 10 bls. rags.
American Over-Ocean Corp., Takaoka Maru, Kobe, 25 bls. rags.
J. Cohen Son & Co., Laconia, Liverpool, 38 bls. rags.
Mutnick Bros., Laconia, Liverpool, 4 bls. rags.
Anglo South American Trust Co., S. Ventana, Bremen, 127 bls. jute card waste.
D. C. Andrews & Co., N. Amsterdam, Rotterdam, 17 bls. rags.
Lombard Trading Corp., Tuscania, London, 45 bls. rags.
Bank of The Manhattan Co., Chicago City, Bristol, 216 bls. rags.
Manufacturers Trust Co., Pan America, Buenos Aires, 15 bls. rags.
Darmstadt, Scott & Courtney, Cabo Espartel, Genoa, 229 bls. bagging.
R. Canovai figli, Cabo Espartel, Leghorn, 489 bls. rags.
Castle & Overton, Inc., Cabo Espartel, Barcelona, 49 bls. rags.
P. Berlowitz, Hektor, Alexandria, 195 bls. rags.
E. J. Keller Co., Inc., Hektor, Alexandria, 101 bls. rags.
Brown Bros. & Co., Minnesota, London, 27 bls. rags.
Gallagher & Ascher, Innoko, Rotterdam, 51 bls rags.
Castle & Overton, Inc., Innoko, Rotterdam, 4 bls. rags.
E. J. Keller Co., Inc., Sacandaga, Antwerp, 160 bls. flax waste.
Chase National Bank, Sacandaga, Antwerp, 170 bls. flax waste.
E. J. Keller Co., Inc., Bremen, Bremen, 78 bls. rags.
American Exchange Irving Trust Co., Columbia, Trieste, 41 bls. rags.
Anglo South American Trust Co., Columbia, Trieste, 68 bls. rags.
Furness, Withy & Co., Ltd., Wheatmore, Dundee, 34 bls. paper stock.
S. Birkenstein & Son, Wheatmore, Leith, 63 bls. bagging.
H. G. Lichtenstein, Wheatmore, Leith, 128 bls. bagging.
E. Mayer, France Maru, Hamburg, 353 bls. rags.

OLD ROPE

W. Steck & Co., Vincent, Havre, 174 bls.
W. Steck & Co., N. Amsterdam, Rotterdam, 76 coils.
Brown Bros. & Co., N. Amsterdam, Rotterdam, 62 coils.
Brown Bros. & Co., Chicago City, Bristol, 65 coils, 56 bls.
E. J. Keller Co., Inc., Cabo Espartel, Genoa, 187 bls.
A. Bloch & Co., Cabo Espartel, Genoa, 73 bls.
Anglo South American Trust Co., Columbia, Trieste, 36 bls.
Brown Bros. & Co., Rotterdam, Rotterdam, 77 bls.
Union National Bank, Wheatmore, Leith, 33 bls.
International Purchasing Co., Wheatmore, Leith, 52 bls.

MANILA ROPE

Ellermans' Wilson Line, Minnesota, London, 110 coils.

CASEIN

A. Klipstein & Co., Vincent, Havre, 183 bags, 15,020 kilos.

(*Continued on page 62*)

West Virginia Pulp and Paper Company

Manufacturers of

SUPERCALENDERED
and
MACHINE FINISHED BOOK
and LITHOGRAPHIC
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Offset, Envelope, Bond, Writing, Cover and Music Paper, High Grade Coated Book, Index Bristol, Post Card, Kraft and Label Papers.

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The papers in which silicate of soda is used are numerous. For convenience, we'll name a baker's dozen:

Kraft	Offset
Writing	Cover
Glassine	Bristol
Tissue	Container Board
Wrapping	Magazine
Book	Manila

Trunk Fibre Board

Other grades, including news, are improved in quality by the use of "S" Brand or "A-Syrup" Silicates. No need to change your furnish. Either of these Quartz Quality Silicates can be used with rosin, clay or starch. Tinted and highly colored papers, as well as whites, are made regularly with silicates.

In addition to an improvement in the quality of your sheet, you will save dollars and cents by retaining larger proportions of clay, starch, rosin and fibre. It only takes a small trial to convince you. Write for the details of our special test offer.

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Philadelphia Quartz Company

General Offices: Philadelphia

Manufacturing Plants

Chester, Pa. Kansas City, Kans. Rahway, N. J.
Anderson, Ind. Gardenville, N. Y. St. Louis, Mo.

Quartz Quality Silicates of Soda

Imports of Paper and Paper Stock

(Continued from page 60)

Kalbfleisch Corp., Pan America, Buenos Aires, 576 bags.
Equitable Trust Co., De Grasse, Havre, 399 bags.
Brown Bros. & Co., De Grasse, Havre, 334 bags.

CHINA CLAY

C. B. Richard & Co., Chicago City, Bristol, 267 bags.
C. T. Wilson & Co., Inc., Chicago City, Bristol, 25 casks.
National City Bank, Chicago City, Bristol, 258 bags.
Strahl & Pietsch, Cleveland, Hamburg, 100 bags, 5,000 kilos.
J. Richardson & Co., India Maru, Fowey, 453 tons, 4 cwt.
Paper Makers Importing Co., India Maru, Fowey, 1,009 tons, 4 cwt.
Atlantic National Bank, India Maru, Fowey, 1,108 tons, 6 cwt.

WOOD PULP

E. M. Sergeant & Co., Stockholm, Gothenburg, 542 bls. dry soda pulp.
Castle & Overton, Inc., Innoko, Rotterdam, 180 bls. wood pulp, 28 tons.
M. Gottesman & Co., Inc., Columbia, Sebenico, 5,400 bls. wood pulp.
Atterbury Bros., Inc., Carlsholm, Stockholm, 300 bls. sulphite, 50 tons.
Buck, Kiaer & Co., Inc., Carlsholm, Stockholm, 1,200 bls. chemical pulp, 203 tons.
Scandinavian Pulp Agency, Inc., Carlsholm, Norrkoping, 1,250 bls. sulphate, 254 tons.
Parsons & Whittemore, Inc., Carlsholm, Kotka, 167 bls. wood pulp, 27 tons.
Bulkley, Dunton & Co., Rotterdam, ——, 850 bls. wood pulp.
Chase National Bank, France Maru, Hamburg, 334 bls. wood pulp, 51 tons.
W. Hartman & Co., Inc., France Maru, Hamburg, 125 bls. wood pulp, 25 tons.

WOOD FLOUR

A. Kramer & Co., Rotterdam, Rotterdam, 300 bags.

WOOD PULP BOARDS

C. K. MacAlpine & Co., Stockholm, Gothenburg, 9 bls.
Wilkinson Bros. & Co., Inc., Stockholm, Gothenburg, 80 rolls.

PHILADELPHIA IMPORTS

WEEK ENDING SEPTEMBER 3, 1927

E. A. Stone & Co., City of St. Joseph, Leghorn, 80 bls. rags.
American Over-Ocean Corp., Takaoka Maru, Kobe, 225 bls. rags.
J. M. Hagy Waste Works, Takaoka Maru, Kobe, 50 bls. rags.
S. E. Ingber, Innoko, Rotterdam, 93 bls. fustians.
Castle & Overton, Inc., Innoko, Rotterdam, 180 bls. wood pulp, 28 tons.
Wolsey Import Co., Innoko, Rotterdam, 185 bls. rags.
F. Weber & Co., Sacandaga, Antwerp, 38 cs. printing paper.
H. Reeve Angel & Co., Inc., Sacandaga, Antwerp, 2 cs. wrapping paper.
Castle & Overton, Inc., Sacandaga, Antwerp, 261 bls. rags.
Brown Bros. & Co., Sacandaga, Antwerp, 158 bls. rags.
A. Hurst & Co., Sacandaga, Antwerp, 93 bls. rags.
E. H. Bailey & Co., Sacandaga, Antwerp, 7 cs. printing paper.
Neidich Process Co., Carlsholm, Kotka, 97 cs. tissue paper
S. Birkenstein & Son, Wheatmore, Leith, 85 bls. old rope.
J. A. Steer & Co., Wheatmore, Leith, 103 bls. old rope.
Bulkley, Dunton & Co., Denderah, ——, 60 bls. rags.

BOSTON IMPORTS

WEEK ENDING SEPTEMBER 3, 1927

Atterbury Bros., Inc., Carlsholm, Stockholm, 600 bls. sulphite, 101 tons.
Bulkley, Dunton & Co., Carlsholm, ——, 1,250 bls. sulphite, 253 tons.
Pagel, Horton & Co., Inc., Carlsholm, Gefle, 4,000 bls sulphite, 403 tons.
Brown Bros. & Co., Carlsholm, Norrsundet, 5,875 bls. sulphate, 1,192 tons.
Bulkley, Dunton & Co., Boschdyk, ——, 136 bls. wood pulp.
Bulkley, Dunton & Co., Seattle Spirit, ——, 250 bls. wood pulp.
Bulkley, Dunton & Co., Seattle Spirit, ——, 179 bls. rags.
Bulkley, Dunton & Co., Strassa, ——, 300 bls. wood pulp.

GALVESTON IMPORTS

WEEK ENDING SEPTEMBER 3, 1927

Bulkley, Dunton & Co., Oakman, ——, 180 bls. wood pulp.
Bulkley, Dunton & Co., Rio Panuco, ——, 150 bls. wood pulp.

NEW ORLEANS IMPORTS

WEEK ENDING SEPTEMBER 3, 1927

Bulkley, Dunton & Co., Vogesen, ——, 1,400 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING SEPTEMBER 3, 1927

Darmstadt, Scott & Courtney, Western Ally, Antwerp, 111 bls. bagging.
E. Butterworth & Co., Inc., Western Ally, Antwerp, 80 bls. bagging.
National City Bank, Western Ally, Antwerp, 148 bls. bagging.
N. Y. Trust Co., Western Ally, Antwerp, 118 bls. rags.
Dixie Jute Bagging Corp., Western Ally, Antwerp, 72 bls. bagging.

BALTIMORE IMPORTS

WEEK ENDING SEPTEMBER 3, 1927

Congoleum Nairn Co., Vincent, Dunkirk, 65 bls. rags.
V. Galaup, Vincent, Havre, 77 bls. rags.
Congoleum Nairn Co., Vincent, Havre, 516 bls. bagging, 730 bls. rags.
Kaufmans', Vincent, Havre, 2 cs. writing paper.
W. H. Masson, Chicago City, Bristol, 81 coils old rope.
W. H. Masson, Chicago City, Bristol, 329 bls. waste paper.
Chase National Bank, Chicago City, Bristol, 147 bls. rags.
National City Bank, Chicago City, Bristol, 171 bls. rags.
National City Bank, Columbia, Trieste, 238 bls. rags.
Congoleum Nairn Co., Western Ally, Antwerp, 1,380 bls. rags, 325 bls. bagging.
Wertheim Bros., Takaoka Maru, Yokohama, 5 cs. tissue paper.

PORTLAND IMPORTS

WEEK ENDING SEPTEMBER 3, 1927

Atlantic National Bank, India Maru, Fowey, 532 tons, 7 cwt. china clay.
J. Richardson & Co., India Maru, Fowey, 144 tons, 4 cwt. china clay.
Canada Paper Mills, India Maru, Fowey, 103 tons china clay.
Ritchie & Ramsay, India Maru, Fowey, 51 tons, 4 cwt. china clay.
J. B. Moors & Co., India Maru, Fowey, 1,224 tons, 1 cwt. china clay.
J. W. Higman & Co., Inc., India Maru, Fowey, 1,331 tons, 10 cwt. china clay.
Paper Makers Importing Co., India Maru, Fowey, 1,052 tons, 7 cwt. china clay.

Gatineau Among Leading Power Companies in Canada

[FROM OUR REGULAR CORRESPONDENT]

Gatineau Power Company is now one of the two leading power companies in Canada. It owns and operates in the Province of Quebec thirteen hydro-electric developments on the Gatineau, Petite Blanche, Blanche, Petite National, Rouge, North and Ouareau Rivers, and on Gordon Creek. At Paugan, the Company has under construction a third hydro-electric plant on the Gatineau River. Work is well advanced on this development and it is expected that the plant will be generating electricity by the fall of next year. Delivery of electric energy to the Ontario Hydro-Electric Power Commission begins October 1, 1928.

The plants of the company have an aggregate designed capacity of over 600,000 horsepower, greater than the developed horsepower on the American side of Niagara Falls. While the Chelsea and Farmers plants on the Gatineau River, now nearing completion, are built to house five units each, but four will be installed initially. The other units at these plants will be installed when the demand for electric energy justifies it. At Paugan six units will be installed initially, the powerhouse having capacity for two more.

The power plants of the company are interconnected by a system of modern high-tension transmission lines, thus insuring greater continuity of power supply and a more complete use of generating facilities.

Over three hundred and sixty miles of high-tension distribution lines carrying the current from the plants of the Company serve an area of over 4,800 square miles. This district has a population of about 220,000 and lies between Hull and Montreal, north to Rawdon, on the Ouareau River, and south to Coteau on the St. Lawrence River.

New Charters Granted

A federal charter has been granted to the Progressive Corrugated Equipment Company, Ltd., with an authorized capital of $50,000 and head office in London, Ont. The incorporators are L. H. Shroeder, of Brooklyn, N. Y., and London interests, where a new factory will be established in the paper box line. It is also understood that a plant will be opened in Montreal at a later date.

Another concern which has been awarded a provincial charter is the Davis Stationery Company, Ltd., of Welland, Ont., with a capital stock of $40,000. Allen E. Davis, manufacturer, is at the head of the concern, which is empowered to carry on business as box and paper manufacturers, publishers, printers, etc.

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New York Market Review

Office of THE PAPER TRADE JOURNAL,
Wednesday, September 7, 1927.

Trading in the local paper market is quite healthy for the season and a continual expansion is looked for during the balance of the year. A good volume of inquiries is being received on account of future business and the trade is generally optimistic over the outlook. Prices are holding up very well and there is little talk of concessions.

Demand for news print is improving and many publishers are engaged in replenishing their stocks in order to take care of future requirements. Spot supplies of news print are apparently sufficient to take care of the current request. Notwithstanding the heavy production being maintained this year, the output is being absorbed in a satisfactory manner.

Production of box board is proceeding in good volume and is keyed by the demand. Prices of the various grades are steady and single manila lined chip, in particular, is very firm. The position of the fine paper market is gradually improving and quotations are holding up to schedule, in most instances. The coarse paper market is exhibiting a strong undertone and wrapping paper is moving at a satisfactory rate.

Mechanical Pulp

The ground wood market is practically unchanged. Demand for mechanical pulp is still light and, with offerings in ample supply, prices remain rather easy. Now that the holidays are on the wane, however, it is believed that more interest will gradually develop in the market from now on, until the end of the year.

Chemical Pulp

No further developments were reported in the chemical pulp market. While both the imported and the domestic grades have only been in moderate request of late, consumers are said to be taking more interest in the market and more lively trading is anticipated in the near future. Prices remain unchanged and shading is infrequent.

Old Rope and Bagging

The demand from the paper mills for old rope and bagging is fairly satisfactory and a moderate amount of business was transacted during the week. Incidentally, both imported and domestic manila rope are in somewhat better request. Most of the business transacted in the bagging market was along routine lines. Prices generally remain unaltered.

Rags

Inquiries for foreign and domestic rags are becoming more prevalent now that the holidays are nearly over. The market is beginning to exhibit a strong undertone and the position will probably become firmer should the request increase to any great extent. Prices are holding up very well, in most instances.

Waste Paper

Paper stock is still decidedly scarce and, with the demand from the paper mills showing signs of expansion, the market is in a firmer position than for some considerable time past. Collections have been below normal and supplies are decidedly limited. The advanced prices quoted in the previous week are being maintained without difficulty.

Twine

While the position of the twine market is practically unchanged it is generally believed that purchasing will expand materially during the closing months of the year. In some quarters, prices are considered to be too low and an advance is confidently predicted to take place as soon as the autumn buying season gets properly under way.

Cost and Technical Association Meets

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., September 6, 1927.—The devastating effects of Bolshevism on the paper industry in both Russia and Scandinavia were considered at the Wednesday evening dinner session of the Kalamazoo Valley local division of the Cost and Technical Association of the Paper Industry, held at the Columbia hotel. The speaker was Ivar Lundbach, of the Technical Department of the Lee Paper Company, Vicksburg. He is a native of Scandinavia and a recent comer to America. He reviewed personal experiences in connection with the topic covered.

George Ferguson, manager of the Cost Department of the Watervleit Paper Company, spoke on "Determination and Application of Machine Hour Rates for Paper Mills."

Harry C. Bradford, secretary of the Kalamazoo Valley local, announces that a special meeting of the pulp committee will be called in the near future, probably two weeks. This committee is particularly interested in pulp problems as affecting mills in this district.

James H. Wright, Sr., Dead

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., September 6, 1927.—James H. Wright, Sr., 59, one of the best known paper mill supply men in the middle west, died suddenly at his residence in this city, Wednesday evening, August 24. He was a victim of a heart attack. For eight years he was assistant to the late Frank H. Milham, president of the Bryant Paper Company.

Mr. Wright was a native of Oshkosh, Wis., and for 20 years with the Kimberly-Clark Paper Company and then went to the Consolidated Water Power and Paper Company, Wisconsin Rapids, remaining there until he came to Kalamazoo.

The deceased was married in 1896 to Elizabeth Post, of Pompton, N. J. She survives him, also a son, James H. Wright, Jr., of New York, and two sisters, Mrs. P. B. Lawson, Menasha, Wis., and Mrs. W. O. Brown, San Diego, Cal. Burial was at Neenah, Wis.

To Represent Missisquoi Pulp & Paper Co.

CHICAGO, September 6, 1927.—The Missisquoi Pulp and Paper Company, whose plant is at Sheldon Springs, Vt., announce the appointment of Edward B. Sheaffer as solicitor and sales representative in the Chicago District. This territory includes Illinois, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, Ohio and Wisconsin. Mr. Sheaffer is well known in this market through his previous connection with the Crocker-McElwain Company of Holyoke, Mass. Mr. Sheaffer will make his headquarters in Chicago at 22 West Monroe street, Room 904, temporary phone Randolph 3419.

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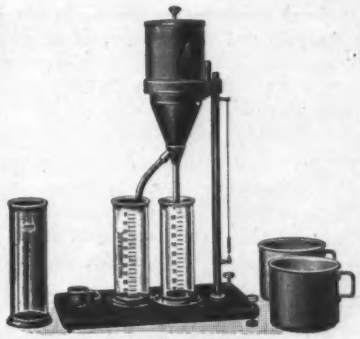

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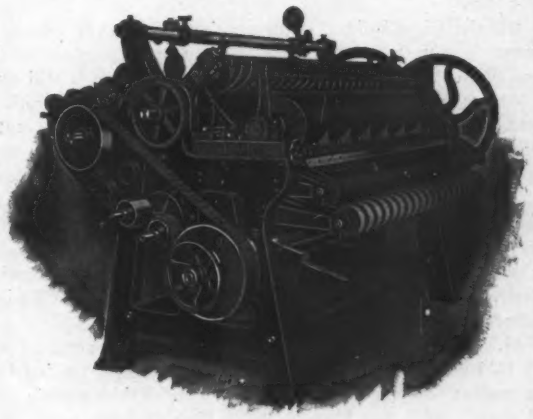

CUTTER KNIVES PATENT TOP SLITTER

HAMBLET MACHINE CO.
LAWRENCE MASS.

Miscellaneous Markets

Office of THE PAPER TRADE JOURNAL,
Wednesday, September 7, 1927.

Business in the local chemical market was rather quiet during the past week, but now that Labor Day has passed, a general expansion is looked for from now on to the end of the year. Contract withdrawals have been moving in a normal manner and have been well up to average. Prices have been holding up to schedule and little change is anticipated for some time.

BLANC FIXE—Steadiness continues to prevail in the blanc fixe market and both the pulp and the powder are in good request. Prices remain unchanged from the previously quoted levels. The pulp is still quoted at $60 per ton, in bulk, while the powder is selling at from 4 cents to 4½ cents a pound, in barrels, at works.

BLEACHING POWDER—Consumption of bleaching powder is being maintained at a satisfactory rate. Shipments against contract are moving at a steady pace and the market is in a sound position. Bleaching powder is still selling at from $2 to $2.40 per 100 pounds, in large drums, at works, according to quantity.

CASEIN—Only a moderate demand for casein was experienced during the past week and prices were somewhat easier. However, the market will probably become more lively now that the holidays are nearly over. Domestic casein is now quoted at from 17 cents to 18 cents a pound. Imported casein is selling at from 18 cents to 18¼ cents a pound, all in bags, car lot quantities.

CAUSTIC SODA—Most of the business transacted in the caustic soda market was along routine lines. However, contract withdrawals proved very satisfactory during the past month and the market is exhibiting a strong undertone. Solid caustic soda is quoted at from $3 to $3.10 per 100 pounds, in large drums, at works. Spot car lots are selling at from $3.20 to $3.25 per 100 pounds. The flake and the ground are offered at around $3.50 per 100 pounds.

CHINA CLAY—Demand for china clay was somewhat quieter during the past week, due to the holidays. A more active market, however, is indicated in the near future. Prices remain unaltered. English china clay is still quoted at from $15 to $25 a ton, ship side. Domestic paper makers' clay is selling at from $8 to $9 a ton, in bulk, at mine, and pulverized at from $10 to $12 a ton.

CHLORINE—Liquid chlorine continues in steady request and shipments against standing contracts are moving at an excellent rate. Prices are holding up to schedule. Chlorine is still quoted at 4 cents a pound, in tanks, or multi-unit cars, at works, on contract orders. The spot quotation ranges from 4¼ cents to 4½ cents a pound.

ROSIN—The rosin market is practically unchanged. Demand for the various grades is about normal for the season but some improvement is anticipated shortly, now that the holidays are passing. At the naval stores, the grades of gum rosin used in the paper mills are quoted at around $10.45 per 280 pounds, in barrels, ship side. Wood rosin is selling at $9.50 per 280 pounds, southern shipping points.

SALT CAKE—Manufacturers of salt cake are reported to be well sold ahead on contract. Due to the holidays, trading in the spot market has been rather quiet of late. Prices remain steady and unchanged. Salt cake is still selling at from $18 to $19 a ton, in bulk, at works. Chrome salt cake is quoted at from $14 to $15 a ton, in bulk, at works.

SODA ASH—Contract withdrawals of soda ash are moving in excellent manner and the prevailing demand is considered quite satisfactory for the time of the year. Quotations are holding up to schedule. Contract quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.20; in bags, $1.32½; and in barrels, $1.57½.

STARCH—The starch market is in a sound position and the demand for this product is persistent. Heavy shipments continue to go forward to consumers. Prices rule steady to firm. Special paper makers' starch is still quoted at $3.07 per 100 pounds, in bags, and at $3.24 per 100 pounds, in bags, at works.

SULPHATE OF ALUMINA—Conditions in the sulphate of alumina market are normal for the time of the year. The contract movement is holding up well. Prices remain unaltered. Commercial grades of sulphate of alumina are selling at from $1.40 to $1.45 per 100 pounds. The iron free is quoted at from $2 to $2.05 per 100 pounds, in bags, at works.

SULPHUR—No new developments have transpired in the sulphur market. Demand from the paper mills is steady and consumers are taking deliveries in good volume. Prices remain very steady. Sulphur is still quoted at from $18 to $19 per ton, in bulk, at mine, according to quantity. The spot quotation remains unchanged at $20 per ton.

TALC—Production of talc is being maintained at a good rate and offerings of this product are quite sufficient to take care of the prevailing request. Prices are unchanged from the previously quoted levels. Quotations on domestic talc range from $16 to $18 a ton, at eastern mills. French talc is selling at from $18 to $22 a ton, ship side.

Wisconsin Paper Industry Happenings

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., September 3, 1927.—J. A. Kimberly, one of the founders of the Kimberly-Clark Company, Neenah, Wis., has returned with Mrs. Kimberly to Redlands, Cal., after spending the summer at Neenah. Their home has been located at Redlands for a number of years. Mr. Kimberly is now 89 years old.

Colonel F. J. Schneller, of Neenah, Wis., vice president of the Gilbert Paper Company, Menasha, Wis., and his son Frank, are entered in the International Father and Son Rifle Match which takes place September 27 at Zurich, Switzerland. Col. Schneller was recently elected Wisconsin commander of the American Legion, and leaves next week with his family for the Legion convention in Paris, France.

William F. Asmus, a papermaker for twenty years at the Neenah, Paper Company, Neenah, Wis., died suddenly several days ago at his home. He was 49 years of age.

International Calls in Debentures

The International Paper Company has called for redemption October 1, next, at 102½ and accrued interest, $10,000,000 of 6 per cent convertible gold debentures now outstanding, and maturing in 1941. This is in compliance with the trust indenture between the company and the Chase National Bank, trustee.

The privilege of converting the debentures into cumulative 7 per cent preferred stock at the rate of $100 of debentures for each $100 of par value stock also expires on that date.

At the same time there will also end the right, exercisable with such conversion, to purchase common stock on the basis specified in the trust indenture or on the more favorable terms proposed by the company in connection with its recent issue of additional common stock. This gave the right to buy common stock at $40 a share in the ratio of two shares for each $1,000 of debentures converted.

Stuebing-Cowan's Revised Plans

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., August 16, 1927.—The Stuebing-Cowan Truck Company are adding the manufacture of steel bound platforms to the local plant, necessitating an increase in the number of hands employed. Under the revised plans of the Stuebing-Cowan Company, the Cowan truck will continue to be manufactured here. These platforms were hitherto only manufactured at Cincinnati. Better rates by water are said to be obtainable from Holyoke.

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BONDS	BID	OFFERED
Advance Bag & Paper, 7s 1943	105	107
A. P. W. Pulp & Power, 7s 1945	101	102
American Writing Paper, 6s 1947	79	82
Bastrap Pulp & Paper, 6½s 1940	100	103
British Columbia Pulp & Paper, 6s 1950	85	90*
Beaver Products Corp., 7½s 1942	106	109
Berkshire Hills Paper, 8s 1941	60	80
Brown Paper Co., 1st 5½s 1946	94	98
Bryant Paper Co., 6s 1942	100½	102
Cape Breton Pulp & Paper, 6s 1932	101	103
Central Paper Serial 6, 6½s 1942	89	...
Champion Coated Paper, 6s 1926 to 1932	99	...
Champion Fibre, 8s 1930	100	...
Champion Paper Corp'n, 1st 6s 1945	95	97
Continental Paper Products, 6½s 1943	88	91½
Cornell Wood Prod., 7½s 1937	100	104*
Crown Willamette Paper, 6s 1951	97	101
Donnaconna Paper, 6s 1940	101	102½
Dells Paper & Pulp Serial, 6s 1926-38	*95	...
Eastern Mfg. Co., 7s 1938	89	91
Eddy Paper, 7½s 1931	102	104
Escanaba Paper Serial, 6s 1926-39	94	96
Filer Fibre Serial, 7s 1926-39	95	...
Fort Orange Paper, 7s 1942	95	100*
Fox River Paper, 7s 1931	99	...
Gair Co. (The Robt.), 7s 1937	104	106
Gilbert Paper Co., 6½s 1926-29	89	...
Hammermill Paper, 6s 1939	100	103*
Hoberg Paper & Fibre, 7s 1937	94½	96
Itaska Paper & Prairie River Power, J+5½s 1926-38	94	96*
Itaska Paper, 1st 6s 1933-38	96	98*
Kalamazoo Veg. Parchment, 6s 1938	98	...
Marinette & Menominee, 7½s 1936	103½	105
Menasha Printing & Carton, 6½s 1939	99½	...
Mengel Company, 7s 1926 to 1934	103	...
Monroe Paper Products, 7½s 1932	96	...
Munising Paper, 6s 1927-36	96	100
Nekoosa Edwards, 1st Ref. 6s 1928 to 1942	96	99*
Orono Pulp & Paper, 6s 1943	98	...
Orono Pulp & Paper, 5s 1941	94	...
Oswego Falls Corp., 6s 1941	98	100*
Oxford Paper, 6s 1947	104	...
Paepcke Paper Mills, 7s 1930	99	None
Parsons Pulp & Lumber, 7s 1928	97	...
Parker Young Co., 6½s 1944	96½	98½
Paterson Parchment Paper, 6s 1938	100½	102
Penobscot Chemical Fibre, 6s 1942	98	...
Poland Paper, 7s 1930	98	...
Port Alfred Pulp, 6½s 1943	*96	...
Queens City Paper, 7s 1932	95	100*
Richardson Co., 6s 1938	100	...
Spanish River Pulp & Paper, 8s 1941	106	110
Stevens & Thompson Paper, 6s 1942	93	95
St. Anne Paper, 6½s 1946	95½	98*
St. Croix Paper, 5s 1926-37	95	98*
St. Regis Paper Serial, 6½s 1926-35	98½	...
Tait Paper & Color Industries, 6s 1934	90	95
Taggart Bros. Co., 6s 1944	94	97
Ticonderoga Pulp & Paper, 5s 1930	95	98
Ticonderoga Pulp & Paper, 6s 1940	99	101
Warren (The S. D.) Company, 6s 1945	99	101
Wotab Paper, 6½s 1943	102	...
Westfield River Paper, 7s 1926-43	Wanted	...
Whitaker Paper, 7s 1942	106	108
Witmer-Parsons Pulp & Lbr. (Units)	63	70

STOCKS	BID	ASKED
Advance Bag & Paper, 8% Pfd.	100	None
Am. Tissue Mills, 7% Pfd.	95	100
British Columbia P. & P., Pfd.	65	70
Brompton Pulp & Paper, 8% Pfd.	93	98*
Brown Corpn., 7% Pfd.	97	100*
Champion Fibre, 7% Pfd.	105	...
Diem & Wing, 7% Cum. Pfd.	87	...
Donnaconna Paper, Com.	58	...
Donnaconna Paper, Pfd.	99	None
Eastern Mfg. Co., 1st Pfd.	34	37
Great Northern Paper (new)	62	65
Hammermill Paper, 7% Pfd.	105	110
Hinde & Dauch, Com.	135	...
Hinde & Dauch, Pfd.	100	...
Holyoke Card & Paper	150	None
Marathon Paper Mills, Com.	125	...
Midwest Box Co., Pfd. 8%	80	85
Midwest Box Co., Pfd. 6%	55	65
Louis De Jonge Co., 7% Pfd.	93	96
Oxford Papers, Com.	170	...
Oxford Paper Co., Pfd.	175	...
Penobscot Chemical Fibre, Com.	65	75*
Richardson Co., 7% Pfd.	104	...
Rubberoid Company (Ex. Rights)	68	72
Seaman Container, Class B (par $1)	1	None Off.
Seaman Paper Co.	Wanted	None Off.
St. Croix Paper	150	170
St. Regis Paper Co., 7% Cum. Pfd.	101½	None
Westfield River Paper Co., 1st Pfd.	Wanted	None Off.
West Virginia Pulp and Paper, Com.	52	57
West Virginia Pulp and Paper, Pfd.	100½	102½
Whittaker Paper, 7% Cum. Pfd.	97	103

* Nominal.

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine Sized	8.00	@11.00
News—		
Rolls, contract	3.25	@ —
Rolls, transient	3.25	@ 3.50
Sheets	3.65	@ 3.85
Side Runs	3.00	@ 3.75
Book, Cased—		
S. & S. C.	6.35	@ 7.75
M. F.	6.25	@ 7.75
Coated and Enamel	8.00	@15.00
Lithograph	8.00	@15.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.10	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .85
Kraft	.90	@ 1.00
Manila	.75	@ .85
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	5.25	@ 5.50
Southern	4.75	@ 5.25
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

Boards—per ton—		
News	47.50	@50.00
Straw	53.50	@57.50
Chip	45.00	@50.00
Binders' Boards	70.00	@75.00
Sgl. Mla. Ll. Chip.	57.50	@60.00
Wood Pulp	80.00	@85.00
Container	65.00	@70.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—		
Moist	28.00	@30.00
Dry	32.00	@34.00

(F. o. b. Mill)

No. 1 Domestic	27.00	@30.00
Screenings	15.00	@20.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.50	@ 4.50
Easy Bleaching	2.85	@ 3.10
No. 1 strong unbleached	2.50	@ 2.75
Mitscherlich unbleached	2.65	@ 3.40
No. 2 strong unbleached	2.40	@ 2.55
No. 1 Kraft	2.70	@ 2.90
No. 2 Kraft	2.50	@ 2.60
Sulphate—		
Bleached	3.75	@ 4.00

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.40	@ 4.75
Easy Bleaching Sulphite	2.85	@ 3.05
News Sulphite	2.50	@ 2.70
Mitscherlich	3.25	@ 3.70
Kraft (Domestic)	2.70	@ 3.40
Soda Bleached	3.50	@ 3.75
Sulphate Screenings—		
Coarse	.75	@ .85
Refined	1.50	@ 1.85

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	11.50	@12.00
New White, No. 2	8.00	@ 8.50
Silesias No. 1	7.25	@ 7.75
New Unbleached	10.25	@10.75
Washables	4.25	@ 4.75
Fancy	5.50	@ 6.00
Blue Overall	6.75	@ 7.25
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Mixed Khaki Cuttings	4.50	@ 5.25
Pink Corset Cuttings	8.00	@ 8.50
O. D. Khaki Cuttings	5.00	@ 5.50
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.75	@ 6.50
Miscellaneous	4.75	@ 5.25
White, No. 2—		
Repacked	3.25	@ 3.75
Miscellaneous	2.75	@ 3.00
St. Soiled, White	2.50	@ 2.75
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.60	@ 1.70
No. 1	1.60	@ 1.70
No. 2	1.35	@ 1.45
No. 3	1.25	@ 1.35
No. 4	1.25	@ 1.35
No. 5A	.95	@ 1.05

Foreign Rags

New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.75	@ 8.50
Unbleached Cottons	10.00	@11.00
New White Cuttings	10.50	@11.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50
New Mixed Cuttings	3.00	@ 3.50
New Dark Cuttings	2.75	@ 3.25
No. 1 White Linens	7.00	@ 7.75
No. 2 White Linens	5.25	@ 6.00
No. 3 White Linens	4.00	@ 4.50
No. 4 White Linens	3.00	@ 3.50
Old Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med. Light Prints	1.90	@ 2.10
Dutch Blue Cottons	2.25	@ 2.50
German Blue Linens	2.50	@ 2.75
German Blue Cottons	2.00	@ 2.25
Checks and Blues	1.75	@ 2.00
Lindsay Garments	1.70	@ 1.75
Dark Cottons	1.55	@ 1.60
Shoppery	1.50	@ 1.55
French Blues	2.25	@ 2.50

Old Rope and Bagging

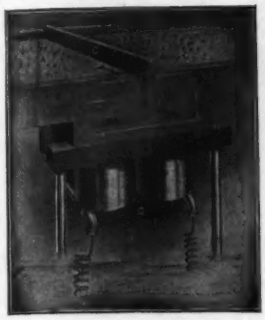
(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.80	@ 1.90
Domestic	1.80	@ 1.90
Wool Tares, light	1.60	@ 1.70
Wool Tares, heavy	1.60	@ 1.70
Bright Bagging	1.60	@ 1.70
Small Mixed Rope	1.50	@ 1.65
Manila Rope—		
Foreign	3.25	@ 3.75
Domestic	4.25	@ 4.75
New Burlap Cut	3.00	@ 3.25
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	3.25	@ 3.50
Hard, White, No. 2	2.75	@ 2.90
Soft, White, No. 1	2.85	@ 3.00
Flat Stock—		
Stitchless	1.25	@ 1.35
Overissue Mag.	1.25	@ 1.35
Solid Flat Book	1.25	@ 1.35
Crumpled No. 1	.85	@ .95
Solid Book Ledger	1.90	@ 2.10
Ledger Stock	1.55	@ 1.65
New B. B. Chips	.65	@ .75
Manilas—		
New Env. Cut	2.40	@ 2.60
New Cuttings	1.60	@ 1.85
Extra No. 1 old	1.25	@ 1.35
Print	.80	@ .90
Container	.65	@ .75
Bogus Wrapper	.75	@ .85
Old Kraft Machine Compressed bales	2.10	@ 2.20
News—		
No. 1 White News	1.70	@ 1.80
Strictly Overissue	.75	@ .85
Strictly Folded	.65	@ .70
No. 1 Mixed Paper	.60	@ .65
Common paper	.35	@ .45



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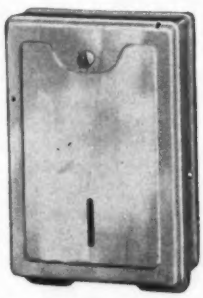

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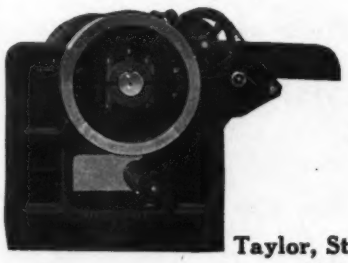

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Taylor, Stiles & Company
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Controls both live and exhaust for any purpose where steam is used, or it will control the direct steam when used alone. While most sensitive to any change in temperature of dryers, it has been found to be perfectly reliable and, furthermore, it is not continually getting out of order—the common regulator trouble.

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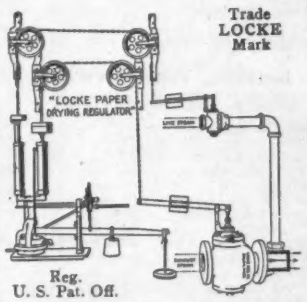


Trade LOCKE Mark

Reg. U. S. Pat. Off.

Locke Regulator Co., 76 North St., Salem, Mass.

Twines

(F. o. b. Mill)

Cotton—			
No. 1	.28	@	.29
No. 2	.26	@	.27
No. 3	.24	@	.25
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.21	@	.23
No. 2	.20	@	.22
Tube Rope—			
4-ply and larger	.18	@	.19
Fine Tube Yarn—			
5-ply and larger	.23	@	.27
4-ply	.24	@	.28
3-ply	.26	@	.30
Unfinished India—			
Basis	.16	@	.17
Paper Makers Twine			
Balls	.13	@	.15
Box Twine, 2-3 ply	.17	@	.19
Jute Rope	.21	@	.23
Ameri. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.18	@	.20
No. 2 Basis	.16	@	.18
Sisal Lath Yarn—			
No. 1	.16	@	.18
No. 2	.14	@	.16
Manila Rope	.24	@	.26

CHICAGO

All Rag Bond	.35	@	.41
No. 1 Rag Bond	.25	@	.35
No. 2 Rag Bond	.14	@	.25
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
News—Roll, mill	.03½	@	.04¼
News—Sheets, mill	.03¾	@	.04¾
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.05¾	@	.06¼
Southern Kraft	.04½	@	.05
No. 2 Kraft	.05	@	.05¼
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¾
White Tissue—			
20x30 Sheet	.07¼	@	.07½
Boards, per ton—			
(Delivered Central Territory)			
Plain Chip	45.00	@	47.50
Solid News	47.50	@	—
Manila Line Chip	55.00	@	57.50
Container Lined—			
(Delivered Central Territory)			
85 Test	65.00	@	70.00
100 Test	70.00	@	75.00

PHILADELPHIA

Paper

(F. o. b. Mill)

Bonds	.07	@	.40
Ledgers	.11	@	.40
Writings—			
Superfine	.13	@	.18
Extra fine	—	@	.22
Fine	.20	@	.26½
Fine, No. 2	.16	@	.25
Fine, No. 3	.12	@	.20
Book, M. F.	.06¾	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.11	@	.16
Coated Lithograph	.09	@	.12
Label	.09	@	.12
News	.03¾	@	.04
No. 1 Jute Manila	.09½	@	—
Manila Sul., No. 1	.04½	@	.06
Manila, No. 2	.04	@	.04½
No. 2 Kraft	.05	@	.05¼
No. 1 Kraft	.06	@	.06¼
Common Bogus	.02¾	@	—
Straw Board	60.00	@	65.00
News Board	45.00	@	50.00
Chip Board	40.00	@	42.00
Wood Pulp Board	4.50	@	5.00
(Carload Lots)			
Binder Boards—			
No. 1, per ton	85.00	@	90.00
No. 2, per ton	70.00	@	75.00
Carload lots	60.00	@	65.00
Tarred Felts—			
Regular	66.00	@	68.00
Slaters	70.00	@	72.00
Best Tarred, 1-ply (per roll)	1.85	@	1.95
Best Tarred, 2-ply (per roll)	1.55	@	1.70
Best Tarred, 3-ply	2.10	@	2.15
No. 1 Mixed Paper	.65	@	.70

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	2.00	@	2.25
Domestic	1.75	@	2.00
Manila Rope	3.50	@	4.00
Sisal Rope	1.25	@	2.00
Mixed Rope	1.10	@	1.25
Scrap Burlaps	1.50	@	1.65
Wool Tares, heavy	3.00	@	3.50
Mixed Strings	1.25	@	1.35
No. 1, New Light Burlap	2.25	@	2.50
New Burlap Cuttings	2.25	@	2.50

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.50	@	3.60
No. 2 Hard White	3.00	@	3.25
No. 1 Soft White	2.80	@	2.90
No. 2 Soft White	1.90	@	2.00
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.90	@	2.00
Writing Paper	1.65	@	1.75
No. 1 Books, heavy	1.25	@	1.30
No. 2 Books, light	.80	@	.85
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	1.15	@	1.20
Container Manila	.90	@	1.00
Old Kraft	2.00	@	2.20
Common Paper	.50	@	.60
No. 1 Mixed Paper	.50	@	.60
Straw Board, Chip	.60	@	.65
Binders Board, Chip	.60	@	.65
Overissue News	.80	@	.90
Old Newspaper	.60	@	.65

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.11½	@	.12
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07½	@	.08
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable	.04	@	.04½
Fancy	.05½	@	.06
Cottons—according to grades—			
Blue Overall	.07½	@	.08
New Blue	.03½	@	.04
New Black Soft	.05½	@	.06
New Light Seconds	.03	@	.03½
Khaki Cuttings	.04½	@	.05
Corduroy	03	@	.03¾
New Canvas	.08	@	.09
New Black Mixed	.05	@	.05½

Domestic Rags (Old)

White, No. 1—			
Repacked	4.50	@	5.25
Miscellaneous	3.50	@	4.00
White, No. 2—			
Repacked	.02½	@	.03
Miscellaneous	.02	@	.02¼
Thirds and Blues—			
Repacked	2.50	@	2.75
Miscellaneous	1.50	@	1.75
Black Stockings	3.25	@	3.50
Roofing Stock—			
No. 1	1.50	@	1.60
No. 2	1.37½	@	—
No. 3	1.25	@	1.35
No. 4	1.10	@	1.20
No. 5A	.90	@	1.00
B	.80	@	.90
C	.80	@	.90

BOSTON

Paper

(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.15
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.07	@	.20
Superfines	.11	@	.31
News	.03½	@	.04
Book, Super	.06	@	.09
Book, M. F.	.05¾	@	.08½
Book, Coated	.08½	@	.20
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.05¾	@	.06½
No. 2 Kraft	.04¾	@	.05¾
Common Bogus	.02	@	.02½
Delivered New England points			
Straw Board, rolls	.009		57.50
Straw Board in Sheets, basis 35s to 70s			53.50
Filled News Board			47.50
Chip Board			45.00
Single Manila Pulp lined board	57.50	@	62.50
Single White, patent coated board bender	75.00	@	82.50
Wood Pulp Board	80.00	@	85.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.75	@	3.10
No. 2 Hard White	2.60	@	2.90
White Blank News	1.75	@	—
Manila Env. Cuttings	2.00	@	2.25
No. 1 Soft White	2.85	@	3.00
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	1.90	@	1.95
No. 1 Books, Heavy	1.25	@	1.30
No. 1 Books, Light	—	@	1.15
Old Kraft	2.05	@	2.25
No. 1 Old Manila	1.40	@	1.60
No. 1 Mixed Paper	.62½	@	—
Print Manila	.70	@	.80
Overissue News	.80	@	—
Old Newspapers	.65	@	—
Box Board, Chip	.65	@	—

Bagging

(Price f. o. b. Boston)

Gunny No. 1—			
Foreign	1.75	@	—
Domestic	1.50	@	1.60
Manila Rope and Strings—			
Foreign	3.75	@	—
Domestic	4.25	@	4.37½
Mixed Strings	.90	@	1.00
Scrap Burlaps	1.50	@	1.75
Wool Tares, heavy	1.40	@	1.60
New Burlap Cutting	2.15	@	2.25

Domestic Rags (New)

(Price f. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.11¼	@	.11½
Silesias, No. 1	.07	@	.07½
New Unbleached	.10	@	.10½
Fancy	.05¼	@	.06
Washable	.04½	@	—
Cottons—Acording to Grades—Blue—			
Blue Overalls	—	@	.07
New Black, soft	.04	@	.04¼
Khaki Cuttings	.05	@	.05½
Corduroy	.03	@	.03½
New Canvas	.09	@	.10

Domestic Rags (Old)

(Price f. o. b. Boston)

White No. 1—			
Repacked	5.00	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Thirds and Blues—			
Repacked	2.12½	@	2.37½
Miscellaneous	1.75	@	1.90
Roofing Stock—			
No. 1	1.45	@	1.55
No. 2	1.33	@	1.43
No. 3	.96	@	—
No. 4	1.10	@	—

TORONTO

Paper

(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¼	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
News f. o. b. Mills—			
Rolls (carloads)	3.25	@	—
Sheets (carloads)	3.75	@	—
Sheets (2 tons or over)	4.00	@	—
Book—			
No. 1 M. F. (carloads)	7.75	@	—
No. 2 M. F. (carloads)	7.50	@	—
No. 3 M. F. (carloads)	7.25	@	—
No. 1 S. C. (carloads)	8.25	@	—
No. 2 S. C. (carloads)	8.00	@	—
No. 3 S. C. (carloads)	7.75	@	—
No. 1 Coated and Litho	14.50	@	—
No. 2 Coated and Litho	13.50	@	—
No. 3 Coated and Litho	12.75	@	—
Coated tinted	.15	@	—
Wrapping—			
Rag Brown	4.85	@	—
White Rag	5.25	@	—
"B" Manila	5.65	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.20	@	—
M. G.	7.35	@	—

Pulp

(F. o. b. Mill)

Ground wood	25.00	@	27.00
Sulphite easy bleaching	58.00	@	60.00
Sulphite news grade	55.00	@	58.00
Sulphite, bleached	75.00	@	80.00
Sulphate			65.00

Old Waste Paper

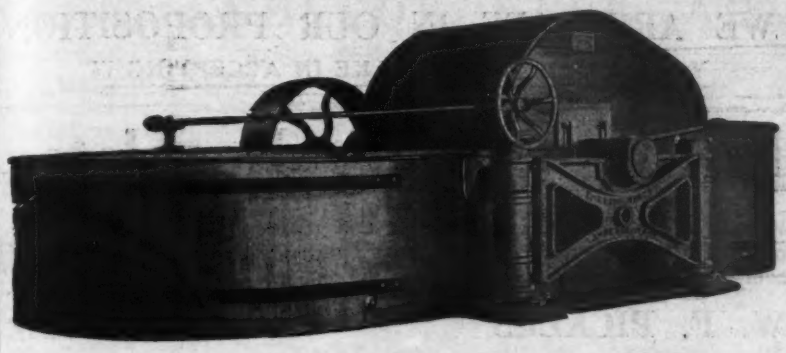
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	3.00	@	—
White Blk, News	1.50	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.25	@	—
Light and Crumpled Book Stock	1.10	@	—
Ledgers and Writings	1.40	@	—
Solid Ledgers	1.40	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.47½	@	.52½
No. 1 Mixed Paper	.55	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.12	@	.12½
Fancy Shirt Cuttings	.06	@	.06¼



EMERSON MFG. CO.

LAWRENCE, MASS.

See the Second-Hand Machinery ads and note the ABSENCE of

EMERSON BEATING ENGINES

They seldom wear out and are never thrown out. PERFECT CIRCULATION. NO "PADDLING."

The "EMERSON" JORDAN

is made in several sizes, both belt and direct connected motor-drive.

WRITE FOR DETAILS

The

ST. REGIS PAPER COMPANY

Daily Capacity
425 TONS

Newsprint, Catalog
Directory Papers
Butchers Manila
Packers Oiled Manila

General Sales Office

49 Wall St., New York

Farmers' Bank Bldg
Pittsburgh, Pa.

THE PULP BUYER

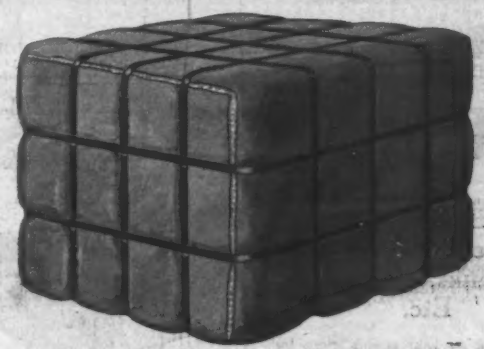
WILL TELL YOU WHY

Fidalgo System Dried and Shredded Pulp (Air Dried)

IS THE ANSWER

Units 10 to 75 ton daily capacity
Producing a compact air dry bale (suitable rail and water shipment 40-45 cu. ft. per ton) of *shredded* pulp.
Higher test than when dried on cylinder machines.

33 1/3 SAVING AT BEATER



WRAPPED BALE

GENERAL ADVANTAGES

No Mechanical Pressure used until dry—upon cutting straps at Beater entire bale allowed to absorb rapidly. No surface pressure on wet pulp during drying process. Only current of warm dehydrated air, produces a product that has its surface pores wide open for ready absorption in Beater and produces a pulp testing from 10 to 30 points higher than any pulp dried in sheet form.

LABOR, STEAM, POWER, ETC.

LESS LABOR than any cylinder or mechanical pressure dryer.
Less than 3,500 lbs. steam required (either live or exhaust) per ton air dried pulp, with economizer pulp can be dried with waste stack gases.

CLEANLINESS

Pulp being dried in closed insulated compartment—FIDALGO SYSTEM produces cleaner pulp.

USERS

Eight installations in United States and ten on order or under construction.
Your inspection invited.

COST

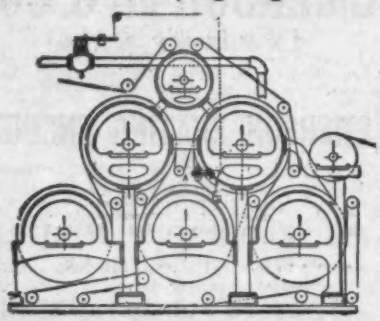
Less than any Drying Method we know of to install.

Write Us for Particulars

Technical Economist Corporation

40 RECTOR STREET NEW YORK, N. Y.
Telephone Whitehall 5243 Cable HERENCO

The Pickles Drying Regulator



WE ARE SAFE IN OUR PROPOSITION

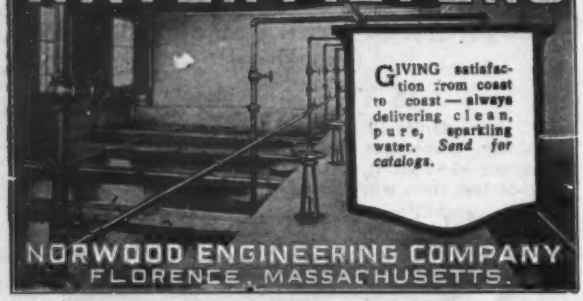
YOU'LL MAKE NO MISTAKE IN ACCEPTING IT

Pickles Drying Regulator

will do everything we claim for it and more. The test costs you nothing until you are satisfied. Many mills tried one and now have every machine equipped. Write for list of users and other information

W. F. PICKLES Buckland, Conn.

NORWOOD WATER FILTERS



GIVING satisfaction from coast to coast — always delivering clean, pure, sparkling water. *Send for catalogs.*

NORWOOD ENGINEERING COMPANY
FLORENCE, MASSACHUSETTS.

Phone WALKER - 0033 - 0034

For Slitting, Rewinding and Flat Paper Cutting

in NEW YORK Call on

McKenna & Phelps

Incorporated

489-493 Broome Street

Where Service & Quality Count

TANKS

Blow Pits
Acid Storage Tanks, Vats, Etc.

Send us your specifications for prompt shipment.

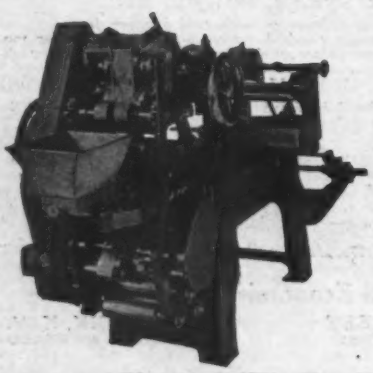
Kalamazoo Tank & Silo Co.
Kalamazoo, Michigan

Bridgeport Heavy Duty Slitter Grinder

Motor Driven
No belts whatever
Entirely self-contained
Send for details

The Bridgeport Safety Emery Wheel Co., Inc.

Manufacturers of The Bridgeport Paper Knife Grinder,
1296 W. Broad St.,
Bridgeport, Conn.



HIGHEST SPEED
Paper Bag Machinery

Get My Quotations Before Placing Your Orders

Special Machinery Designed and Built

A. L. PARRISH,
1702 Robinson St., South Bend, Ind.

WANT AND FOR SALE ADVERTISEMENTS

HELP WANTED

OPPORTUNITY for technically trained executive familiar with Kraft Pulp making. State education and experience and send copies of references with first letter. Address, Box 27-487, care Paper Trade Journal. S-15

WANTED—BEATERMAN: A good, sober steady man for container board mill, two towers. Good position and wages to proper party. Address, Box 27-506, care Paper Trade Journal. S-15

PAPER TRADE readers find our Service effective in making connections. Individual. Confidential. Personally planned by Jacob Penn, known by all mill owners. Not agency. Jacob Penn, Incorporated, 9 Park Place, New York. tf.

WANTED—First-class Fourdrinier machine tender on high grade papers. Must be steady and reliable. Excellent living conditions. Address, Box 27-505, care Paper Trade Journal. S-15

WANTED—Finishing Room Foreman. Must be familiar with finishing various kinds bleached and unbleached Fourdrinier and Cylinder sulphite papers. Must be experienced with operation of rewinders and cutters, able to handle help and run department efficiently. Give previous experience, age and references. Address, Box 27-486, care Paper Trade Journal. S-8

IF YOU are open to overtures for new connection, and qualified for a salary between $2,500 and $25,000, your response to this announcement is invited. The undersigned provides a thoroughly organized service, of recognized standing and reputation, through which preliminaries are negotiated confidentially for positions of the calibre indicated. The procedure is individualized to each client's personal requirements; your identity covered and present position protected. Established sixteen years. Send only name and address for details. R. W. Bixby, Inc., 117 Downtown Building, Buffalo, New York. tf.

SUPERINTENDENT WANTED for mill in New England making tissue and light weight, straight and creped. Must be well up on fast running tissue, not over 40 years old, and well recommended. Knowledge of wood grinding also desired. Address, Box 27-514, care Paper Trade Journal. S-15

WANTED IMMEDIATELY—Tour boss for strawboard mill. Must have experience in .009 strawboard for corrugating. Apply, giving full particulars as to experience and wages required, to the EASTERN PAPER & FELT MILLS CORPORATION, Room 414, Quebec Power Building, QUEBEC, P. Q., CANADA. S-22

SUPERINTENDENT for fiber can and mailing case plant in middle west. State experience and salary expected. Address, Box 27-515, care Paper Trade Journal. S-8

SITUATIONS WANTED

PAPER MILL EXECUTIVE—Young man, with wide practical experience and good education, desires connection as manager or sales manager. Capable to organize and direct production of various grades of paper. Well trained in financial and sales problems. Best of references assured. Address, Box 27-516, care Paper Trade Journal. S-22

PAPER MACHINES

For Sale

In good condition. Immediate delivery.

One 2 cylinder machine. 2 presses; 10 dryers 42" x 84"; one calender; reel; single drum winder; Marshall drive.

One Fourdrinier machine. Wire 96" x 50'. 2 presses; 15 dryers 48" x 94"; one calender; reel; two drum winder; Marshall drive.

By: FRANK H. DAVIS COMPANY
175 Richdale Avenue Cambridge, Mass.

SITUATIONS WANTED

AGGRESSIVE PAPER SALESMAN, of executive ability and wide experience in the manufacture and sale of high-grade book papers—coated, uncoated and specialties—wishes to locate with Mill manufacturing book papers as direct representative with opportunity for advancement. Ten years Mill and Jobbing experience and knows book papers intimately, and can introduce new grades and highly profitable specialties. Wide acquaintance with both merchant and converter trade. Would also consider position as sales manager at mill. Highest credentials. Those having a proposition that offers a real opportunity for a high grade man, please address, giving full particulars, Box 27-495, care Paper Trade Journal. S-8

SUPERINTENDENT wants position. A practical man on all kinds of board specialties and combination boards. Am good on repairs and maintenance; good handler of help; can get results. Am a hustler. Best of reference. Address, Box 27-518, care Paper Trade Journal. S-22

MILL CONNECTION WANTED—Capable experienced salesman desires mill connection. Years of experience in the sales of both coarse and fine paper. Willing to travel. Highest credentials as to ability and integrity. Address, Box 27-490, care Paper Trade Journal. tf.

SULPHATE FOREMAN—Actual experience in every department. Understands chemical control work perfectly. Laboratory and mill experience gained in Canadian and American mills. References. Address, Box 27-500, care Paper Trade Journal. S-8

POSITION WANTED as paper mill manager or production engineer. Extensive experience on rag and wood pulp papers. Services available at once. Can furnish best of references. Address, Box 27-503, care Paper Trade Journal. tf.

MILL OR PRODUCTION MANAGER—Now superintendent of a well known mill, but want to make a change. A splendid business and paper making experience with an excellent production record. Well educated. Address, Box 27-501, care Paper Trade Journal. S-22

PAPER MILL SALES REPRESENTATION for New York City and adjacent territory. Mills making toilet paper, napkins, towels and specialties. 15 years selling experience. Thorough knowledge of jobbers, chain stores and distributors of such products, combined with the manufacturers viewpoint and procedure. Best references from recent connection. Address, Box 27-520, care Paper Trade Journal. S-8

FOR SALE

1—72" Model 10 Cameron.

11—Dryers 48" x 110".

60" trim Black-Clawson Fourdrinier machine.

Several White cedar stuff chests, A-1 shape.

1—48"—3 cylinder machine.

1—70"—2 cylinder machine.

Several Chippers.

Four deck Beloit frames. These are modern and extra heavy.

One Ryther & Pringle Multiple Saw Slasher. Will cut 32'.

One Farrel Roll Grinder.

One No. 2 Lannoye Pulper.

One 61" Holyoke Super-Calender.

The Shartle Brothers Machine Company
Middletown, Ohio tf.

SITUATIONS WANTED

WANTED—Position by man of 30 years experience; charge of pasting department. Experienced on enamel blotting, covers, etc. Address, Box 27-522, care Paper Trade Journal. S-8

FELT SUPERINTENDENT—Ten years with representative mill making dry felt and asbestos. Desires change. Capable of getting production and quality. Best references. Address, Box 27-523, care Paper Trade Journal. tf.

ASSISTANT SUPERINTENDENT—College graduate, chemist, nine years practical experience and research in rag fine writing papermaking and specialties, desires position with opportunity for advancement. Address, Box 27-320, care Paper Trade Journal. tf.

MAN, 32 years of age, thoroughly experienced, mill superintendent or assistant. Expert on all grades of boards, cartons and shipping containers. Will consider selling. Address, Box 27-517, care Paper Trade Journal. S-15

BOSS MILLWRIGHT—17 years experience on maintenance and construction in paper plants. A good machinist and erector. Can layout work and get results. Now employed but wish a change. References. Address, Box 27-492, care Paper Trade Journal. S-8

PAPER MAKING MACHINERY DESIGNER AND GENERAL PLANT ENGINEER open after September 1st. Long and practical experience on this class of work, together with a number of years selling experience. Address, Box 27-497, care Paper Trade Journal. tf.

SALES CONNECTION WANTED by young man, with manufacturer or distributor of product used by paper or pulp mills. Have had extensive sales experience and know fields thoroughly. Address, Box 27-494, care Paper Trade Journal. tf.

CHEMICAL AND TECHNICAL CONTROL DEVELOPMENT—Chemical engineer, with experience in control, research and semi-commercial experimental work, seeks position in control development work. Address, Box 27-509, care Paper Trade Journal. S-8

PULP AND PAPER MILL ENGINEER, with many years experience in design, construction and maintenance, desires position. References. Address, Box 27-470, care Paper Trade Journal. S-8

WANTED—Position as manager or superintendent of mill making binders, leather and other boards. Middle-aged man. Good at construction and repairs. Address, Box 27-381, care Paper Trade Journal. S-9

WANTED—Situation as day foreman or boss machine tender. Familiar with both coarse and fine papers. Fourdrinier and Yankee machines. References. Address, Box 27-472, care Paper Trade Journal. S-8

TOUR BOSS wishes position. Experienced on most all kinds of paper, also glassine and greaseproof. Address, Box 27-433, care Paper Trade Journal. S-22

POSITION WANTED—Superintendent or foreman; chip board or wrapper mill. Experienced at construction and remodeling. Eastern states preferred. Address, Box 27-382, care Paper Trade Journal. S-8

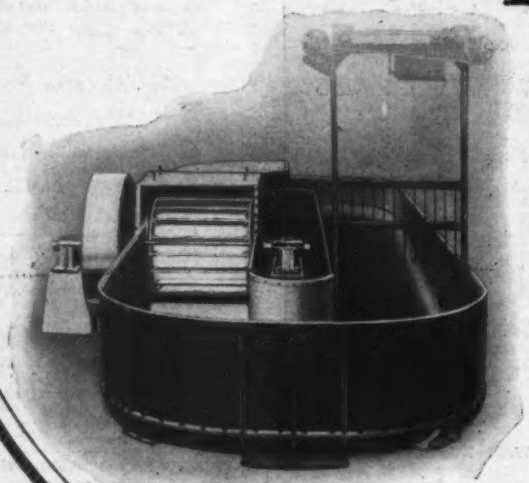
GROUND WOOD SUPERINTENDENT desires position. 20 years practical experience making pulp in up-to-date mills. Can furnish excellent references. Address, Box 27-499, care Paper Trade Journal. S-15

PAPER MILL SUPERINTENDENT—Trained on M. F. and M. G. Kraft and Sulphite papers, over various grades. Best of references. Address, Box 27-393, care Paper Trade Journal. S-8

MISCELLANEOUS

CLARK MANUFACTURING COMPANY, Holyoke, Mass. Telephone 1828. Builders of cylinder moulds, couch and felt rolls, dandy rolls. We cover dandies and cylinders tight, for fast running machines. 3-5-27

Alone and Supreme in the field



No other Breaker ever replaced a Shartle

The Shartle Breaker Beater enjoys a unique record in that with one solitary exception no Shartle Breaker has ever been declared unfit and replaced by a competing make.
Furthermore, in the one instance where this did occur the other unit was cast aside after a brief trial and the Shartle re-installed.
Looking through the other end of the barrel, the records show that the Shartle Breaker enjoys the distinction of having replaced one or many breakers of every other well known make—conclusive evidence of Shartle Breaker supremacy.
If you are not using Shartle Breakers in your mill, we claim and are able to prove, that you are not using the best. We invite the opportunity to make that statement good. Invite us to do so, whenever you are in the market for such equipment.

Shartle Brothers Machine Co.

Middletown, Ohio

SHARTLE BROTHERS

DIVISION OF THE BLACK-CLAWSON COMPANY

Shartle Breakers

MISCELLANEOUS

WANTED—Mill ends and job lots in rolls or flats in any quantity, all grades. Also boards. Joseph Goldstein & Sons, 1302-9 N. Halsted Street, Chicago, Illinois. tf.

WANTED—Side or odd lot rolls ten to ninety pound basis. The larger the quantity the better we like it. Address, Box 27-481, care Paper Trade Journal. tf.

SEND YOUR ODD LOT LIST of coarse and fine papers together with samples to Goldman Paper & Paper Stock Co., 414 So. Front Street, Philadelphia, Pa. tf.

WANTED

WANTED—Second hand Slitter approximately eighty inches wide. Address, Box 27-482, care Paper Trade Journal. tf

WANTED—82" or 92" second-hand Slitter and Rewinder. Must be first class condition. Address, Box 27-510, care Paper Trade Journal. S-15

WANTED—2 W. & P. Pulpers, 2 Filter Presses and 1 Rogers Wet Machine. Address, Box 27-285, care Paper Trade Journal. tf

WANTED—42" to 48" Cameron Winder. Will pay cash for one in good condition. Address, Box 27-524, care Paper Trade Journal. S-15

GOVERNMENT BIDS

TREASURY DEPARTMENT, Office of the Secretary, Washington, D. C., September 1, 1927.—Sealed proposals will be received by the Secretary of the Treasury, until 11 o'clock a. m., Thursday, September 29, 1927, from manufacturers of bond, bank-note and other fine papers, for furnishing 400 tons, more or less, of paper of the highest quality of the type developed at the Bureau of Standards, containing the distinctive feature prescribed by the Secretary of the Treasury, required for the printing of United States currency, during the period from November 1, 1927, to June 30, 1928. Blank forms for submitting proposals, together with specifications and further information, will be furnished manufacturers who intend to submit proposals, upon application to the Commissioner of the Public Debt, Treasury Department. C. S. DEWEY, Acting Secretary of the Treasury. S-22

HELP WANTED

WANTED—An experienced adjuster on a Lockport machine, both flat and square; also on a Potdevin S O S. State experience and salary expected. Steady position for the right man. All communications will be held strictly confidential. Address, Box 27-502, care Paper Trade Journal. tf.

AN EXCEPTIONAL OPPORTUNITY for an energetic young man. Must be a good correspondent and have thorough knowledge of office routine. State age, experience, etc. Address, Box 27-526, care Paper Trade Journal. S-8

Address Replies

to advertisements appearing under Box Numbers in care of

PAPER TRADE JOURNAL
10 East 39th St.,
New York, N. Y.

FOR SALE

FOR SALE—Fully equipped mill at Lambertville, New Jersey; ready to run for light weight papers. Easy terms. Address, Box 27-521, care Paper Trade Journal. S-29

FOR SALE—One second hand Noble & Wood beater, 1800-2000 lbs.; Two Jones 1500 lbs.; Two Dillon 1400 lbs.; Two Dilts 1200 lbs.; Six Dayton Beater & Hoist 1400 lbs. AS IS, or will rebuild them into High Speed Beaters to travel 80 to 110 feet per minute. Leo Shlick Engineering Company, 314 Beacon St., Boston, Mass. S-8

FOR SALE—Second-hand 1200 lb. wood tub N. & W. beater. In good condition. The Noble & Wood Machine Co., Hoosick Falls, N. Y tf.

FOR SALE—6 Used Jones Imperial Jordans, with bronze or steel fillings. Will sell "as is" or factory rebuilt. THE NOBLE & WOOD MACHINE CO., Hoosick Falls, N. Y. tf.

FOR SALE

1—72" Hamblet Single Cutter with 24 roll back stand.
1—84" Beloit heavy duty duplex.
1—84" Black-Clawson heavy duty duplex, with duplex slitter.
1—52" Moore & White Cutter with Moore & White Layboy and Backstands.
1—48" Moore & White Cutter with Moore & White Layboy and Backstands.
1—42" Moore & White Cutter with Moore & White Layboy and Backstands.
1—60" Hamblet Cutter with 10 roll Backstands.
1—110" Moore & White Cutter with Moore & White Layboy and Backstands.
1—82" Heavy duty Hamblet Single Cutter with 24 roll Backstands.
2—58" Moore & White Single Cutters.
4—54" Moore & White Single Cutters.
6—48" Moore & White Single Cutters.
1—57" Hamblet Duplex Cutter, Heavy Duty.

The Shartle Brothers Machine Co.,
Middletown, Ohio tf.

CLEARANCE SALE
SACRIFICE PRICES

From Storage

Wilmington, Vt. and St. Louis, Mo.

1—Triple effect Yaryan Horiz. type Evaporator, with pumps, piping, etc. Capacity 1200 gals. liquid per hour with a concentration of 50%.
1—450 sq. ft. new Yaryan Heater.
2—9' dia., 30' long Manitowoc Incinerators with drives.
1—84" Union Iron Wks. Chipper, 30—2024" knives
1—83" Baker Mfg. Co. Chipper 4—16" Knives.
4—150 H. P. Dillon Boilers, 150 lb. pressure.
1—750 G. P. M. Fairbanks Morse Fire Pump.
Several Centrifugal Pumps, 2" up to 12".
3 phase, 60 cycle, 550 volt Motors, 10 to 100 H. P.
4—50 K. V. A. G. E. Transformers, 2200 volt—575 V.
1—84" Carthage Chipper.

TECHNICAL ECONOMIST CORPORATION
40 RECTOR STREET
NEW YORK, N. Y.

FOR SALE

2—Iron tub Beaters, practically new. Rolls 70 x 66. Made by Emerson Mfg. Co.

1—Wood tub Beater, practically new. Roll 70 x 66. Made by Emerson Mfg. Co.

2—Dilts Beaters, iron tubs. Rolls 54 x 62. A-1 shape.

1—Heavy duty Beloit 114" Paster.

4—Jones Washers. Iron tubs. Rolls 67 x 60. Good shape.

1—Dayton Beater and Hoist Iron tub Beater. A-1. Rolls 64" diameter, 54" face.

1—Breaker Roll 64" diameter by 54" face.

1—Downingtown Iron tub Beater with Brownell Buehler perforated back fall. Rebuilt for immediate shipment. Roll 44" x 44".

The Shartle Brothers Machine Co.
Middletown, Ohio tf.

CONTROLLING INTEREST IN PAPER MILL FOR SALE

Situated adjacent to New York and Philadelphia. Two railroads. Electric, steam and water power. Fully equipped with modern machinery.

Mill is manufacturing a high-grade special paper and has an excellent selling organization covering the entire country. Large amount of business ahead will show net profit of three to four thousand dollars monthly. Can show 30% on investment. Financial end can be worked out satisfactorily to responsible party.

Full details will be given at interview only, to be held in New York or Philadelphia. Address, Box 27-525, care Paper Trade Journal. S-15

HEADQUARTERS
For Good Used Machinery

ROTARY DRYERS AND KILNS
6—4' x 30' American Process.
2—6' x 60'.
1—6' x 100'.
1—8' x 125'.

PULPER MIXERS
1—W. & P. size 17-200 gals.
Also several smaller sizes.

TUBE AND ROD MILLS
1—3' 6" x 12' Allis Chalmers.
1—4' x 16' Schmidt.
5—5' x 22' Allis Chalmers.
7—5' 6" x 22' Schmidt.
1—8' x 22' Gates.

SULPHUR BURNERS
1—3' x 8' Glens Falls.
4—4' x 16' Glens Falls.
4—4' x 20' Glens Falls.

EVAPORATORS
1—Stokes Triple Effect, 1,000 sq. ft.
1—Scott Triple Effect, 1,350 sq. ft.
1—Swenson Triple Effect, 1,750 sq. ft.
2—Swenson Triple Effect, 2,300 sq. ft.

ROTARY FILTERS
2—9' x 4' Oliver.
2—9' x 8' Oliver.
2—9' x 6' Oliver, Acid Proof.
1—9' x 8' Oliver, Acid Proof.

SEND US YOUR INQUIRIES
WE BUY YOUR IDLE EQUIPMENT

CONSOLIDATED PRODUCTS COMPANY, INC.
15 PARK ROW NEW YORK, N. Y.
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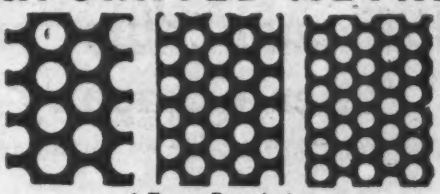

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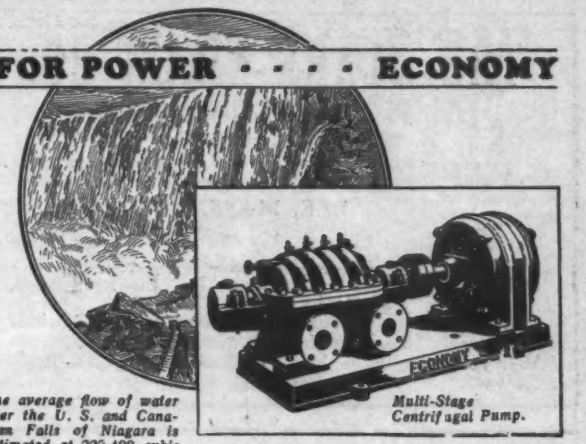

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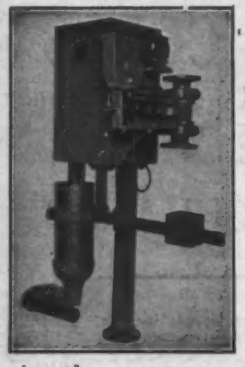

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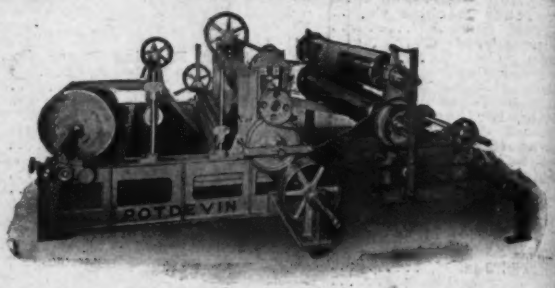

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